

Form 3 - AVST Small Animal Advanced Surgical Skills Form

The AVST requires a licensed veterinarian or a VTS who has mastered the skill attest to your ability to perform the task. Small animal applicants must complete the Small Animal Advanced Surgical Skills Form. Interested potential large animal applicants must contact the AVST Board Member Heidi Reuss-Lamky at Hreusslamky@avst-vts.org.

Your testifier **must** sign at the bottom of the form to validate their initials throughout the form. If the testifier signing and validating any particular skill is a veterinary surgeon, ensure their name is also listed as the primary clinician in your case log summary or on your case report. **Mastery is defined as being able to perform the task safely, with a high degree of success, and without being coached or prompted. Mastery requires having performed the task in a wide variety of patients and situations.** The applicant must demonstrate mastery of **90%** of the skills on this form (equivalent to mastering 70 of the 78 listed skills for the Small Animal Advanced Surgical Skills Form). **The skills you have mastered must be demonstrated in your case logs and case reports.**

The AVST understands that some of the skills contained on the Small Animal Advanced Surgical Skills Form may be difficult to demonstrate in a typical surgical case log summary. Once you have documented at least 50 valid surgical cases in your case log you may utilize any remaining case log entries for the sole purpose of documenting these skills (e.g. “Dr. Roberts verified my ability to use an ultrasonic cleaner to process surgical instruments”, “Dr. Smith verified that I correctly identified orthopedic plating instrumentation and properly operated nitrogen powered equipment.” “Dr. Jones witnessed me safely and properly handling glutaraldehyde during cold sterilization of the arthroscope.” “Drs. Daniels and Murphy verified my OR conduct and ability to properly maintain asepsis.”) See the AVST Case Log Sample on page 10 for other creative ways to demonstrate these skills. **Please do not exceed 75 case log entries.**

If a skill was mastered at a prior place of employment during the current application period listed in your employment history, it must be validated by the veterinarian associated with the prior employment in the form of a signature on the Small Animal Advanced Surgical Skills Form or by a letter stating such.

The AVST Small Animal Advanced Surgical Skills Form example begins on page 22.

Form 4 - Waiver, Release and Indemnity Agreement

This form must be signed and included in your application submission.

Form 5 - Continuing Education Record

Applicant must submit a **minimum of forty (40) qualifying hours** of advanced continuing education (CE) pertaining to surgical procedures or associated topics that can be directly correlated to any of the AVST Advanced Surgical Skills. **However, no more than five (5) hours of anesthesia-related or analgesia-related CE will be accepted.** More than 40 hours of CE may be

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Only the continuing education activities outlined below will be applicable for this academy. Furthermore, submitting continuing education activities analogous to self-study (e.g. reading journal articles and passing an associated quiz) will not be accepted.

You must use the **Continuing Education Record** to submit only the continuing education attended by the applicant from **January 1, 2016** to the date you submit your application (previous 5 years.)

A photocopy of a CE Certificate provided by the organization or speaker must be provided as proof of attendance and should follow each CE sheet. Cancelled checks or other documents will not be accepted as proof of attendance.

Use the AVST's definition of continuing education to determine whether or not your CE meets the requirements regarding content. If the title of the CE does not provide enough information to show the CE was related to surgery, you may submit photocopies of the course description provided by the organization providing the CE. Each meeting attended should be listed on a **separate** copy of this form. For a particular meeting, each lecture attended should be listed on the form. In evaluating the CE resources, the AVST Credential's Committee is looking for diversity in the percentage of CE obtained from in-house, online, and meeting/conference attendance, therefore **no more than 50% (20 hours)** of in-house and online combined CE will be accepted. If more than 20 hours total of in-house and online CE are submitted, they will not contribute towards the total hours needed. **This means that it is MANDATORY that at least 20 hours of CE must come from national, state or local meetings. Furthermore, ensure that the people providing the CE are AVST approved speakers.**

Continuing Education Definitions

Nationally recognized meeting:

A gathering of people for the purpose of providing continuing education in the field of veterinary medicine. National meetings are announced in journals typically read by professionals in the field of veterinary medicine. There is an expectation that continuing education at a nationally recognized meeting will be provided by lecturers or instructors who are considered experts in the subject they are discussing. You will need an official CE certificate. **Please be aware:** the people providing instruction may not meet the AVST requirements for acceptable CE.

Local meeting:

A gathering of people for the purpose of providing continuing education in the field of veterinary medicine. Local meetings are announced by state/city organizations. There is an expectation that continuing education at a local meeting will be provided by lecturers or instructors who are considered experts in the subject they are discussing. You will need an official CE certificate. Please be aware: the people providing instruction may not meet the AVST requirements for acceptable CE.

Online training:

Requires an official CE certificate or a signed letter from the person supervising your attendance in the program. The CE certificate or letter should detail when the training took place, the name and diplomate status of the CE provider, the objectives and goals of the training program, a statement of your satisfactory performance and the total hours provided. **Please be aware:** the people providing instruction may not meet the AVST requirements for acceptable CE.

In-house training:

Continuing education provided for people who work at a particular practice or institution. This type of continuing education is not open to the veterinary profession at large and lecturers or instructors often work at the practice or institution. You must be currently employed at the facility providing the in-house training. You may hire an outside speaker to come talk to your practice as part of in-house training. **Please be aware:** the people providing instruction may not meet the AVST requirements for acceptable CE. If part of your CE is in-house (meetings accessible only to technicians inside your facility) you will need an official CE certificate or a signed letter from the person supervising your attendance. The CE certificate or letter should detail where and when the training took place, the name and diplomate status of the CE provider, the objectives and goals, a statement of your satisfactory performance and the total hours provided. (1 hour of lecture = 1 hour of CE)

Letter of Intent and Curriculum Vitae

Please provide a brief letter that describes who you are and why you are interested in becoming an AVST member. Please tell us what you feel you can contribute to the AVST and what you plan to do with the certification once you have achieved it. Letters should be a maximum of ONE page in length, single-spaced, using 12-point font Times New Roman, and 1-inch margins. You must also include a current copy of your curriculum vitae.

Letters of Recommendation

You must include **two signed letters** of recommendation with **each** copy of the application submitted. One of the letters must be from an ACVS/ECVS diplomate or a VTS member (any academy). The second letter must be from one of the veterinarians included as a testifier of your skills and who has signed on the bottom of Form 3. The letters should include details on training, ethical behavior and quality of skills. The letters may be sealed at the wish of the writer.

Final Instructions

The AVST designed the application forms so you can complete most of the forms using your computer. You will need to complete the forms and print them out. With exception of the AVST Small Animal Advanced Surgical Skills Form and other application-associated signatures, all forms must be word-processed. Hand written forms will not be accepted. Remember, this is a professional application; spelling/grammar and overall presentation will be considered when the application is reviewed. The AVST reserves the right to contact the applicant and ask for additional documentation to verify information contained in the application.

You must submit **FIVE (5)** copies of your application packet; each copy **must** be professionally **bound** or **secured** in a binder. Loose forms will not be accepted or reviewed.

You may submit the **\$50.00** application fee using the PayPal page or you may enclose a check for **\$50.00** made out to: AVST Treasurer. Mail the completed applications to:

ACADEMY OF VETERINARY SURGICAL TECHNICIANS
6516 MONONA DR. # 246
MADISON, WISCONSIN 53716

Applications must be postmarked on or before **February 1, 2021**. Applications postmarked after this date will not be accepted. All submissions are final. Nothing may be added to an application after it has been received.

Included at the end of this application packet is a checklist to help assure you complete all the necessary steps to submit your application. **If your application is incomplete or late, it will be rejected.** You will receive notification of your eligibility to participate in the certification exam on or before **April 30, 2021**. You may take the examination a total of 3 times in 3 years with the acceptance of the application.

Appeals

If your application is rejected, you may appeal the decision within 30 days of the notification of rejection. Your appeal must be made in writing to the AVST Secretary and submitted to AVST, 6516 Monona Dr. #246, Madison, Wisconsin 53716. All appeal decisions will be based on the **original submitted application**. You may not submit **additional data** to augment the original application, therefore ensure the original application is complete and accurately reflects your qualifications.

Academy of Veterinary Surgical Technicians (AVST) Definition of Surgery

- A. Veterinary Surgery includes the advanced knowledge of surgical procedures and instrumentation (including instrument identification and care), proper sterilization techniques, principles of infection control, aseptic techniques, perioperative patient care, physical rehabilitation and a thorough knowledge of the anatomy and pathophysiology of animals.
- B. Surgery is defined as the branch of medicine that deals with the diagnosis and treatment of injury, deformity and disease by manual and instrumental means. A procedure is considered surgical when it involves cutting of tissues or closure of a previously sustained wound. A surgical procedure may include elective, emergency, reconstructive, transplantation, replantation, cosmetic or minimally invasive procedures such as arthroscopy, laparoscopy, thoracoscopy and laser surgery.

Professional History and Experience Form

Form 1

Full Name: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

Present Occupation/Title: _____

Are you a graduate of an AVMA accredited veterinary technology program? Y-N Graduation Date: _____

Are you currently licensed/registered/possess a credential to legally practice in your state or province? Y-N
Pass date of VTNE (or equivalent): _____

Are you a NAVTA member? Y-N If Yes, please provide NAVTA member ID number: _____

Have you previously earned a VTS designation in any other discipline? Y-N
If Yes, please list discipline and date VTS designation achieved: _____

List your employment history for only the previous 5 years.

Name of Practice/Institution:	Start Date:	End Date:
Type of Practice:	Average number of hours worked per week:	Percent of time devoted to surgery:
		Total surgery hours:

Name of Practice/Institution:	Start Date:	End Date:
Type of Practice:	Average number of hours worked per week:	Percent of time devoted to surgery:
		Total surgery hours:

Name of Practice/Institution:	Start Date:	End Date:
Type of Practice:	Average number of hours worked per week:	Percent of time devoted to surgery:
		Total surgery hours:

Name of Practice/Institution:	Start Date:	End Date:
Type of Practice:	Average number of hours worked per week:	Percent of time devoted to surgery:
		Total surgery hours:

Total surgery hours: _____

Case Log#: <u>1</u> Name/ID#: <u>Doe / 023456</u> Species/Breed: <u>Canine/Lab Mix</u> Sex: <u>FS</u> Age: <u>9 yr.</u> Weight: <u>9kg</u>	
Date: <u>11/16/2020</u> Duration of Care: <u>8 days</u> Tech Role: <u>Circulating</u> Clinician: <u>Robert McRight, DVM, DACVS</u>	
Surgery & Reason Performed:	Parathyroidectomy. Pre-anesthetic bloodwork prior to an unrelated surgery showed elevated serum calcium. Parathyroid function panel analyzing serum parathyroid hormone
Pre-op Work-up:	Bloodwork from the referring veterinarian showed elevated parathyroid hormone and ionized calcium. Ionized calcium was elevated when rechecked. Urinalysis was WNL. Rectal exam found no abnormalities. Cervical ultrasound: right cranial parathyroid gland enlarged. Perianal ultrasound to look at anal sacs: WNL. Thoracic radiographs and AUS for metastasis evaluation and presence of urinary calculi were WNL.
Surgical Clip and Aseptic Prep:	The entire ventral neck was clipped and fur was vacuumed. A preliminary scrub using 4% chlorhexidine gluconate (Hibiclens(R)) was performed to remove gross contaminants prior to entering the OR. Once in the OR, open gloving technique was performed. An aseptic scrub in a target pattern using Hibiclens (R) and then sterile 0.9% NaCl for a total of 5 minutes completed the patient scrub.
Room/Table Prep:	The patient was placed in dorsal recumbency with her neck slightly hyperextended over a towel by the circulating technician. Her forelimbs were pulled caudally and tied to the table with a rope. The circulating technician opened the sterile gown packs and gloves as well as the instrument packs and instruments aseptically (the outer wrap was opened carefully to avoid internal wrap contamination) for retrieval by sterile team members.
Specialized Instrumentation & Equipment:	Lone Star retractor ring, Stevens tenotomy scissors, Metzbaum scissors, soft tissue surgery pack, drape pack, #10 and #15 surgical blades, suction tubing, monopolar cautery pencil and tip, laparotomy sponges, 4x4" x-ray detectable sponges, bulb syringe, electrocautery and suction units. 3-0 glycomer 631 (Biosyn), a synthetic absorbable monofilament suture, was used to close the muscle, subcutaneous layer and skin edges.
Other Advanced Skills Performed:	Samples were placed in 10% buffered formalin at a 1:10 tissue to formalin ratio by the circulating technician and submitted for histopathology.
Short-term and Long-term Care (including wound care):	A Tegaderm (TM) pad was placed to cover the incision. Buprenorphine, a partial mu agonist opioid, was given q8h for analgesia. Tramadol, a synthetic opioid, was started once buprenorphine was stopped. Overnight ICU monitoring for seven nights. Continued monitoring for hypocalcemia including facial twitching, tremors, weakness or seizures. Ionized calcium (stat profile) bloodwork run BID. Telemetry to watch for arrhythmias due to calcium fluctuation was monitored for 36hrs. Placed on calcium gluconate and calcitriol, a vitamin D supplement. Calcium carbonate was given PO. Cryotherapy of incision site TID. Ionized calcium level rechecks.
Instrument Use and Sterilization:	Prior to surgery, instruments were hand scrubbed before placement in the ultrasonic cleaner, rinsed, sprayed with instrument lubricant, dried, and packed in peel pouches or drapes with Class 5 indicator strips placed at the inner-most level of wrap. Class 1 indicator tape was used on the outside of items wrapped in drape material, labeled with date and name of the contents. Instruments were sterilized via steam in a pre-vacuum autoclave at 270F for a 4-minute cycle. Items exposed to hydrogen peroxide gas plasma were wrapped in Polydrape (TM), a double thickness SMS polypropylene drape material (containing no cellulose) with a STERRAD (R) chemical indicator strip inside.
Case Log#: <u>2</u> Name/ID#: <u>Flame / 44317</u> Species/Breed: <u>Feline / Siamese</u> Sex: <u>MN</u> Age: <u>9 mo.</u> Weight: <u>4.4 kg</u>	
Date: <u>02/09/2020</u> Duration of Care: <u>2 days</u> Tech Role: <u>Scrub</u> Clinician: <u>James DeBones, DVM, DACVS</u>	
Surgery & Reason Performed:	Left total hip arthroplasty. Left pelvic limb lameness due to left capital physeal fracture.
Pre-op Work-up:	Ventrodorsal (VD) pelvis radiograph from primary veterinarian showed left capital physeal fracture. Auscultation WNL, neurologic exam WNL, and no external wounds noted. VD and lateral pelvis rads repeated under anesthesia by scrub technician wearing lead apron, gloves, thyroid shield, and dosimetry badge. VD radiograph positioning ensured the femurs were extended with obturator foramens and iliac wings symmetrical. Iliac wings and ischium were superimposed on the lateral view. Radiographs included a 10-cm magnification marker at the same level and plane as the acetabulum for implant sizing.
Surgical Clip and Aseptic Prep:	Flame was clipped with a #40 blade over the left hip, extending just past dorsal midline, cranial to the last rib, medially to ventral midline, and distally just past the hock and fur was vacuumed. Vetwrap covered the distal limb and medical tape was used to hang the leg prior to the preliminary surgical scrub and final prep. The scrub technician performed an aseptic hand scrub using 4% chlorhexidine gluconate for a timed 5-minute scrub prior to gowning and closed gloving.
Room/Table Prep:	The operating room was steam cleaned the night before. Instrumentation was collected and Class 1 external sterilization indicators were inspected before being placed in order of necessity for the procedure. The suction unit was tested to ensure it would work for surgical suction as well as for collection of cement fumes from the Stryker Mixevac. The table was flattened for proper patient positioning and preparation.
Specialized Instrumentation & Equipment:	Biomedtrix Micro CFX(R) equipment set, Adson tissue forcep, A-O and Freer elevators. Finger Hohmann, finger Meyerding, and Senn handheld retractors. Gelpi retractors. Stefan reduction forceps. 3M high-speed nitrogen burring drill with 4mm burr. Battery-powered Stryker oscillating sagittal bone saw and Jacob's hand chuck with key. General surgery pack, monopolar and bipolar cautery handpieces, and 7 French Frazier suction. 2-0 and 4-0 polydioxanone (PDS), absorbable monofilament suture, and 4-0 nylon, a monofilament non-absorbable suture, were used.
Other Advanced Skills Performed:	The scrub technician prepared Surgical Simplex P bone cement to putty consistency for a 12mm cemented fixation (CFX) acetabulum. Antibiotic therapy consisted of gentamicin (aminoglycoside good for gram-) and cefazolin (1st generation cephalosporin for gram+ and some gram-) being administered slowly IV 30 minutes prior to the surgical incision being made, with cefazolin repeated IV q 90 min. intraoperatively. Peri-op antibiotics were used primarily due to placement of an implant and the risk of catastrophic failure should infection occur.
Short-term and Long-term Care (including wound care):	Post-operative radiographs confirmed implant positioning prior to transportation to ICU for recovery in a warmed cage with non-slip flooring. Cryotherapy was applied to the surgery site for 20 minutes post-operatively, but repeated application was not tolerated by the patient overnight. The patient was hospitalized for 24 hours after surgery and discharged with an E-collar and incision care instructions. The owners were instructed to provide cage or small room confinement (without jumping surfaces) until repeat RADs were obtained 6 weeks post-op, at which time the patient demonstrated appropriate healing and was allowed a slow return to normal function.
Instrument Use and Sterilization:	The scrub nurse aseptically received the burring drill and nitrogen hose from the circulating technician. The class 5 chemical indicator strip packaged inside each double wrapped instrument was visually inspected prior to placing the instrument on the table. The nitrogen hose was anchored to the patient drape with enough slack for use, and the end was attached to the burring drill. The other end was passed to the circulating technician so it could be attached to the nitrogen supply line. The 4mm burr was inserted into the drill and locked into place.

****Include a copy of the abbreviation list in this packet**

The following abbreviations will be acceptable for use in the Academy of Veterinary Surgical Technicians Case Logs and Case Report

AD - right ear	MLP/MPL - medial patellar luxation
ADCA - adenocarcinoma	MN - male neutered
ALD - angular limb deformity	MRIT - modified retinacular imbrication technique
AS - left ear	NaCl – 0.9% sodium chloride
AU - both ears	NormR - Normosol
B/C - bandage change	NPO - nothing by mouth/nil per os
BAR - bright, alert, responsive	NSAID - non-steroidal anti-inflammatory
BAS – brachycephalic airway syndrome	NSF- No significant findings
BCS - body condition score	NWB - non-weight bearing
BG - blood glucose	OA - osteoarthritis
BID - two times a day (q 12 hours)	OCD - osteochondritis dissecans
BPM - breaths per minute or beats per minute	OD - right eye
BUN - blood urea nitrogen	OE – orchidectomy
Bx - biopsy	OHE - ovariohysterectomy
CBC - complete blood count	ORIF – open reduction and internal fixation for fracture repair
CCL/CrCl - cranial cruciate ligament	OS - left eye
CDET - common digital extensor tendon	OSA - osteosarcoma
cm/mm - centimeter / millimeter	OU - both eyes
CRI - constant rate infusion	P - pulse
CRT - capillary refill time	PCV/TS – packed cell volume / total solids
CSF - cerebrospinal fluid	PDA - patent ductus arteriosus
CVP - central venous pressure	PLA - PlasmaLyte
DDFT - deep digital flexor tendon	PO - by mouth
DJD - degenerative joint disease	PPDH –peritoneal pericardial diaphragmatic hernia
DLH - Domestic longhair	PPV - positive pressure ventilation
DMH- Domestic medium hair	PRN - as needed
DSH - Domestic shorthair	PROM - passive range of motion
ECG - electrocardiogram (graph)	PSS - portosystemic shunt
EMG - electromyogram (graph)	PU - perineal urethrostomy
EO/EtO - ethylene oxide	QAR - quiet, alert, responsive
ESF - external skeletal fixator	QID - four times a day (q 6 hours)
FCP/FMCP – fragmented (medial) coronoid process	R - respirations
FHNE - femoral head and neck excision	RADS - radiographs
FHO - femoral head ostectomy	RDA - right displaced abomasum
FI - female intact	R-IV - remove IV
FLUTD – feline lower urinary tract disease	ROM - range of motion
FNA - fine needle aspirate	S/R - suture removal
FS - female spayed	SC - subcuticular
FSA - fibrosarcoma	SID - once daily
Fx – fracture	SQ - subcutaneous
GSP - general surgery pack	STS - soft tissue sarcoma
HCT - hematocrit	Sx - surgery
HSA - hemangiosarcoma	T - temperature
IC - intracardiac	TECA - total ear canal ablation
ICU - Intensive care unit	TER – total elbow replacement
IM - intramuscular (or intramedullary)	TGH - to go home
IP - intraperitoneal	THA/THR - total hip arthroplasty/ total hip replacement
IPPV - intermittent positive pressure ventilation	TID - three times a day (q 8 hours)
IV - intravenous	TPLO - tibial plateau leveling osteotomy
LarPar – laryngeal paralysis	TPO - triple pelvic osteotomy
LBO - lateral bulla osteotomy	TTA - tibial tuberosity advancement
LDA - left displaced abomasum	UA - urinalysis
LFS - lateral fabellar suture	UAL – unilateral arytenoid lateralization
LLP/LPL - lateral patellar luxation	UTI – urinary tract infection
LRS - lactated ringers solution	VBO - ventral bulla osteotomy
MCT - mast cell tumor	WB - weight bearing
MI - male intact	WNL - within normal limits
ml/cc - milliliter/cubic centimeter	<u>PUT ABBREVIATIONS ADDENDUM PAGE NEXT→</u>

ABBREVIATIONS ADDENDUM PAGE

AUS – abdominal ultrasound
CO₂- carbon dioxide
g - gram
hr – hour
in – inch
kg – kilogram
mg - milligram
min – minute
MIPO- minimally invasive percutaneous osteotomy or minimally invasive plate osteosynthesis
mm – millimeter
OPA-ortho-Phthalaldehyde solution
OR – operating room
ORIF- Open reduction and internal fixation
PE – physical exam
PPE- personal protection equipment
psi – pound per square inch
q8h – every eight hours
q90min – every ninety minutes
µg – microgram

Academy of Veterinary Surgical Technicians (AVST) Case Report Layout

1. Case Log Number

2. Name/ID number

3. Signalment

Age

Sex

Species/Breed (**Ensure a variety of species are represented amongst all case report submissions.**)

Weight

4. Presenting Problem

5. Differential Diagnosis

6. Attending Clinician

7. Pertinent Patient History and Physical Exam

Physical examination findings

Pertinent laboratory test results

Current patient history and pertinent previous history; outline pre-existing/related health problems or procedural complicating factors

Current medications

8. Tentative Diagnosis

9. Diagnostic Imaging Options

Explain any additional procedures or diagnostics used before, during, or after the procedure.

10. Surgical Treatment Options

Include the type of surgical procedure performed and explain why it was chosen over an alternative procedure (i.e., ameroid constrictor versus cellophane banding for a portosystemic shunt.) Include an explanation about the pertinent anatomy and physiology as it relates to the overall surgical plan.

Detail any anticipated complications as well as problems you anticipate from the operative procedure itself.

11. Patient and Equipment Preparation

Pre-surgical care summary

Thoroughly explain preoperative preparation details for each patient's surgical procedure such as anatomic landmarks for the surgical clip margins and other special preoperative considerations (i.e., prepucial flush prior to laparotomy, aseptic prep application precautions around open or draining wounds.)

Provide rationalization for antibiotic or antimicrobial agent choices.

Outline your plan for pain management during the procedure and provide a brief synopsis of any analgesic techniques used.

Explain your role in the preoperative preparations for the surgical procedure. Detail how you anticipated the surgeon's needs regarding unique or specialized instrumentation or equipment requirements and advanced preparation of the surgical suite.

Intraoperative preparations

Discuss aseptic prep agents used and reason for agent selected. Include the application technique or patterns used for both the initial and final aseptic prep applications, recommended contact times, and list any complicating factors encountered.

Explain intraoperative patient position or positioning devices and aseptic technique used for the patient.

Describe the aseptic technique or gowning and gloving methods utilized by all operating room personnel.

Discuss techniques used to ensure that the proper sterilization of instruments and specialized equipment was accomplished before being issued to the surgeon.

12. Operative Report

Provide detailed information regarding the intraoperative setup of the operating suite.

Explain the surgical approach, pertinent anatomy and physiology, and a complete synopsis of the full intraoperative procedure. Discuss any particular intraoperative challenges.

Include all pertinent supplies, instrumentation and equipment used and explain their intended function or purpose.

Include an explanation of implants, sutures or other materials used and why they were chosen.

Outline your responsibility and detail any special handling considerations for tissue or fluid specimens or cultures obtained during the procedure.

Detail how your role was integral to the success of the procedure as you performed duties of either the scrub nurse or circulating nurse.

13. Postoperative Care

Discuss the immediate postoperative patient care provided.

Summarize the complete postoperative nursing care plan and outline anticipated complications as well as treatment options should they occur.

Describe pertinent postoperative care required to complete surgical treatment for the patient's condition (i.e., special diets, use of external coaptation, rehabilitation, or wound care.)

14. Client Education and Prognosis

Define any care the patient requires post operatively including; activity restriction, bandage care, nutrition, medication, rehabilitation, and any follow-up care necessary.

Provide a final summary of the case and/or diagnosis; describe the results of all laboratory tests and how the surgical findings or diagnosis may impact the patient's future prognosis.

15. Include a copy of the instrument and equipment used (as ≤ 6th page). Provide a list of the surgical instruments, equipment and supplies that were anticipated or used during this procedure.

Detail the sterilization techniques utilized for the procedure as well as the methods used to document sterility assurance. List wrapping materials used for each item and include other pertinent data on how each item was wrapped.

16. A list of references should be on the last (≤ 7th) page.

Each case report will contain a maximum of 7 pages and may contain a maximum of **five** 8.5 x 11-inch pages of case report content, a 1 page listing of all surgical instruments and equipment used, and 1 page stating references used, following the format provided. Each case report must be printed in a 10-point Times New Roman font, double-spaced, left and right justified, and with 0.5-inch page margins. *Case reports that do not meet these requirements will be rejected.* The case reports must be the original work of the applicant. **Please be careful to BLACK OUT/DELETE any personal client data such as owner name, address, phone numbers, etc.**

An example of an AVST case report follows these instructions.

AVST Case Log: #2 Name/ID#: Flame, 44317 **Signalment:** 9-month-old, male neutered, Siamese feline, weight 4.4 kg.

Presenting Problem: Weight bearing lameness of the left pelvic limb

Differential Diagnosis: Capital femoral physal fracture, femoral fracture, pelvic fracture, medial patellar luxation

Pertinent Patient History and Physical Exam

Flame had a weight bearing lameness of the left pelvic limb that was noticed on February 7, 2020, when his owner came home from work. The cat was examined by his primary veterinarian that same day. The examination revealed crepitus and pain on palpation and extension of the left hip. A ventral-dorsal (VD) pelvic radiograph was obtained and a left femoral capital physal fracture was diagnosed. Flame was prescribed buprenorphine at 0.01 mg/kg PO TID and was referred to an orthopedic specialist the next day. On physical examination, the rectal temperature was 102.9°F, pulses were 130 beats per minute, respirations were 10 breaths per minute, and mucous membranes were pink with a capillary refill time of one second. No heart murmurs or arrhythmias were noted on auscultation, no external wounds were found on exam and the surgeon confirmed crepitus of the hip joint. Flame resisted manipulation and seemed painful during palpation and PROM of the left hip. The neurological exam was WNL.

Tentative Diagnosis

Based on physical exam, patient history and referral radiographs, a left capital femoral physal fracture was diagnosed. A capital physal fracture, or slipped capital physis, can occur without great force or trauma and usually occurs in young, skeletally immature animals with open physes.¹ Fractures of the capital femoral physes are overrepresented in cats due to an orthopedic developmental disease called slipped capital femoral epiphysis. While all cats may be affected, it is most often diagnosed in young, overweight male cats that were castrated at a young age and it often presents bilaterally in effected patients.²

Diagnostic Imaging Options

Lateral and VD views of the pelvis were taken under general anesthesia by the scrub technician before surgery in order to get accurately positioned radiographs without causing further discomfort to the patient. On a VD pelvis view it is important to make sure the pelvis is straight, symmetrical, and that the femurs are parallel to one another. The hemipelvii should be superimposed on the lateral radiograph. Depending on the surgical procedure chosen, radiographs with proper anatomical positioning and calibration markers are necessary for surgical planning. Poorly positioned radiographs can cause distortion that may lead to the use of inappropriately sized implants. A calibration marker is necessary when using digital radiography so that measurements can be calibrated and corrected for magnification. The calibration device used consisted of two radiopaque ball-bearings suspended a known distance of 10cm apart in a rectangular piece of radiolucent plexiglass, and it was placed in a fixed position, parallel to the radiography table at the same height as the anatomy to be radiographed. All personnel present during radiograph exposure wore appropriate personal protection equipment (lead apron, thyroid shield, gloves, and dosimetry devices at collar level), and non-essential personnel were asked to leave prior to exposure.

Surgical Treatment Options

In order to prevent degenerative joint disease and continued functional lameness with associated pain, surgery was recommended.¹ Three surgical options were discussed: the micro total hip replacement (Micro THR), femoral head ostectomy (FHO), and fracture reduction and fixation. Total hip replacement has been used for over 30 years in medium and large dogs.³ The Micro THR has been available through Biomedtrix Inc. (Boonton Township, NJ) since June 2005.⁴ The goal of the Micro THR is to provide small dogs and cats (<12kg) a pain-free, functional joint. Force plate analysis studies in dogs with THRs showed a return to normal gait and limb function following THR surgery.⁵ One study showed the functional outcome (PE, PROM, muscle mass, and client survey results) following THR as excellent in all three operated cats, and in the same study 3/5 cats operated with FHO were reported as having a lesser outcome than with THR.⁶ The FHO biomechanically alters the hip joint by removing the femoral head and neck, therefore creating a scar tissue pseudoarthrosis. Femoral head ostectomy is considered a salvage procedure that results in the loss of a functional joint, with a post-operative goal of removing the source of pain, which in this case would be the broken fragment. It is a less expensive and specialized operation that can offer a good outcome, provided appropriate aftercare is given. Physical therapy should begin immediately post operatively to build, or maintain, muscle mass and achieve good PROM.⁶ The patient's gait is usually altered due to limb shortening, although it might be imperceptible to owners.⁷ Internal surgical reduction and fixation of the fracture was also offered. Repair of a capital physal fracture can be achieved with Kirschner wires and can provide good function if the fracture is anatomically reduced and stabilized properly and promptly.¹ It has been reported that cats with capital physal fractures have better function with fracture repair versus the FHO.⁸ Following the discussion of options, the owners scheduled Micro THR surgery for the following day with the goal of restoring normal function without future arthritic changes.

Patient and Equipment Preparation

Preventing infection is imperative with joint replacement surgery. If infection occurs, explantation of the prosthesis may be required, leaving the patient with a modified FHO. It is important to follow a consistent protocol and use highly trained team members to shorten anesthesia/surgery time, as the risk of infection increases by 0.5% per minute of anesthesia.⁹ The operating room was steam cleaned the night before. Thirty minutes prior to the incision, cefazolin (22mg/kg) and gentamicin (2.2mg/kg) were administered intravenously. Cefazolin is a first-generation cephalosporin that is a good broad spectrum antibiotic for peri-operative use. Gentamicin is an aminoglycoside antibiotic that is primarily effective against aerobic gram-negative bacteria, and it was chosen to expand the spectrum of the prophylactic antibiotics used peri-operatively.

Shortly after induction, orthogonal radiographs of the pelvis with a Biomedtrix calibration marker were obtained to determine implant selection. Using a Biomedtrix Micro CFX™ digital template, a 12mm acetabular implant and #3 femoral stem implant were deemed most appropriate. After radiographs, the surgical site was prepared using an electrical clipper with a #40 clipper blade. The fur was clipped over the left hip extending just past the vertebral midline, forward to the last rib, to midline medially, and midway between the hock and metatarsus. The clipped area was vacuumed to remove all loose fur. A preliminary aseptic prep was performed

by the circulating technician using clean gauze moistened with 4% chlorhexidine gluconate scrub, three consecutive times for a contact time of two minutes, beginning over the hip and extending to the outer clipped margins. The 4% chlorhexidine gluconate scrub was then wiped off with clean gauze soaked in 0.9% saline solution until all residual scrub was removed. The unclipped portion of the foot was covered with an exam glove and wrapped with bandaging tape. Prior to moving to the operating room (OR), personnel donned caps and masks and removed outer lab coats.

In the OR, the cat was positioned on top of a properly tested and operating ground plate with conductive gel in right lateral recumbency using a vacuum beanbag positioning device to secure the cat in proper position. Patient positioning is vital to THR success, and it is important that the pelvis be aligned with the hemipelvi perfectly superimposed and the vertebral column parallel to the table edge. Incorrect positioning can result in misalignment of the implants at surgery. The left leg was hung to facilitate aseptic preparation of the entire limb and the cat was kept warm using a warm water circulating blanket. A CRI of morphine (0.1mg/kg/hr), lidocaine (20µg/kg/min), and ketamine (5µg/kg/min) was prepared and administered at a rate of 5ml/kg/hr via a fluid pump and a fluid warming device was used. The circulating technician donned sterile gloves via open gloving to begin preparation of the limb. Sterilized gauze moistened with 4% chlorhexidine gluconate scrub was used to perform the scrub in a target pattern starting over the incision site (localized over the greater trochanter) and extending outward to the rest of the clipped area three consecutive times for a contact time of two minutes. Chlorhexidine is a broad-spectrum antiseptic that has a rapid onset time with a minimum two minute contact time and provides residual activity for up to two days.¹ Sterile gauze soaked in 0.9% saline solution was used to remove the residual scrub from the skin.

The two surgical scrub technicians performed an aseptic hand scrub using a 4% chlorhexidine surgical hand scrub with a sterilized scrub brush. Surgical gowns, towels, and gloves were opened by the circulating technician and were donned by the surgical team. Gowns were secured by the circulating technician, and gloves were donned with a closed gloving technique. The circulating technician aseptically opened all surgical packs for the scrub technicians to organize on the main instrument table and one side table. After quarter draping the leg with sterile towels, the scrub technician covered the non-sterile portion of the foot with sterile cohesive bandaging. The tape securing the leg in hanging position was cut and released by the circulating technician. The leg was covered with a double layer of sterile stockinette to minimize contact with the skin during the procedure and two disposable drapes were placed over the patient. The scrub technicians organized the instruments on the instrument table chronologically so that the instruments to be used first were easiest to access. When instruments were no longer needed, they were placed at the back of the instrument table to reduce clutter. A side instrument table was also used for larger surgical instrumentation including the Biomedtrix Micro CFX™ instrumentation set. The surgeon performed the same aseptic scrub prior to gowning, gloving, and entering the OR to begin surgery.

Operative Report

Sharp-sharp utility scissors were used to cut an opening in the stockinette just before the incision was made. An incision was made with a #15 blade on a Bard-Parker #3 blade handle cranial to the greater trochanter of the femur and extended to the middle of

the femoral diaphysis. The surgeon sewed sterile water-proof plastic ophthalmic drapes into the incision using 4-0 nylon to prevent contamination from the skin. The blade handle, Mayo-Hegar needle holders, and Adson tissue forceps used on the initial skin incision were set aside and not used for the rest of the procedure. Curved Mayo dissecting scissors and a new #15 blade and handle were used to dissect through adipose tissue, fascia, and muscle while monopolar electrocautery aided in hemostasis. Two baby Gelpi retractors allowed visualization of the hip joint, then the round ligament was transected with Mayo scissors and the fragment of the capital femoral epiphysis was grasped and removed with a small Stefan bone reduction forceps. A Biomedtrix femoral neck template was utilized to guide the surgeon in making the appropriate femoral neck osteotomy line. A battery powered oscillating saw with a 0.5cm wide saw blade was used to perform the femoral neck osteotomy while a single action Lempert rongeur aided in the removal of the fragment. A finger Hohmann and a finger Meyerding retractor allowed visualization of the acetabulum as a single action Lempert rongeur was utilized to remove remnants of the round ligament. A nitrogen-powered high speed drill with a 4mm burr was used to prepare the acetabulum and a 12mm Micro CFX™ acetabular trial was used to ensure proper preparation and sizing. A 20g dose (½ dose) of Surgical Simplex™ P bone cement with 1g of cefazolin was prepared by the scrub technician in a cement mixer until dough phase consistency was reached. The mixer was compromised of a charcoal vapor absorber and connected to the OR suction to reduce inhalation of chemical fumes. Dough phase consistency should not be sticky when manipulated, similar to craft dough. Surgical Simplex™ P (ingredients: 75% methylmethacrylate, 15% polymethylmethacrylate, and 10% barium sulfate) is low viscosity bone cement with a long liquid phase (mixing phase) and a short working phase. Cement preparation to a workable phase requires about five minutes mixing time, dependent on OR temperature, cooler temperatures increase mixing time. The surgeon changed gloves prior to implantation; then applied the cement into the prepared acetabular bone bed, and implanted a 12mm Micro CFX™ acetabular cup. A Freer elevator was used to remove excess cement around the implant while a remaining piece of bone cement was kept on the table to be monitored for cement hardening by the scrub assistant. When the cement was hardened, a piece of sterile gauze was placed in the acetabular cup to protect the polyethylene surface during stem preparation.

A small Stefan bone reduction forceps was placed around the proximal 90° externally rotated femur while a large A-O periosteal elevator was used as a lever to lateralize the proximal femur. The femoral bone bed preparation for the stem was made using an awl to open the canal, followed by #1-2, and #2-3 femoral reamers. All reaming was done with the reamers on a Jacobs hand chuck. A #3 Micro CFX™ femoral trial was utilized to ensure proper implant sizing. Cement was prepared as before and was hand packed into the femoral canal by the surgeon. A #3 Micro CFX™ femoral stem was implanted using a micro femoral impactor and a bone mallet. The stem was held in compression with the impactor by the surgeon until the cement hardened. A remaining piece of unused bone cement was kept on the table to monitor cement hardening by the scrub assistant. Once the cement had hardened, the A-O elevator was removed and excess bone cement was extracted using a Freer elevator. The gauze previously packed in the acetabulum was taken out and discarded. An 8mm +2 femoral trial head and neck length was placed on the stem neck to confirm the desirable femoral neck length and then the Stefan bone reduction forceps was removed, implant reduction was completed, confirmed

appropriate, disarticulated, and the trial head removed. An 8mm +2 femoral head prosthesis was secured onto the femoral stem with a head impactor and mallet and the acetabulum was lavaged with 0.9% saline irrigation and suctioned with a 7 French Frazier suction tip. Caution was used with the suction tip, and all instruments, to ensure the implant surfaces were not scratched. The implants were rearticulated and the implant was inspected for proper alignment and PROM. Capsulorrhaphy and deep gluteal muscle closure were performed using a Halstead vertical mattress pattern with 2-0 polydioxanone (PDS) suture, a slow absorbing monofilament suture that provides adequate tensile strength for up to six weeks. The fascia was closed with 2-0 PDS in a simple continuous pattern. The subcutaneous layer was closed with 4-0 PDS in a simple continuous pattern, and the skin closed with 4-0 nylon monofilament non-absorbable suture. Nylon is a pliable, non-absorbable suture commonly used for skin closure. A lateral and VD radiograph of the pelvis were obtained postoperatively in the same manner as the pre-operative radiographs to ensure proper implant placement prior to moving the patient to recovery.

Post-Operative Care

The patient was moved to recovery and extubated in a heated recovery cage with non-slip flooring. The incision was cold compressed for 20 minutes, but passive cryotherapy was not tolerated overnight. Flame was administered oxymorphone (0.1mg/kg) IV on extubation and placed on maintenance crystalloid fluids overnight. Cefazolin was administered IV every six hours for a total of four doses. Within twelve hours after surgery, he was using the leg well and eating, drinking, and urinating. Twenty-four hours after surgery, Flame was started on 50 mg cefpodoxime (10 mg/kg, off label) PO once daily for 10 days and buccal buprenorphine (0.1mg/kg) TID for 10 days. He was discharged the following day.

Client Education and Prognosis

The owners were given verbal and written discharge instructions. An Elizabethan collar was sent home to prevent licking and chewing at the incision. They were instructed to monitor the incision daily for any drainage and to keep the Elizabethan collar on until suture removal. Sutures were to be removed after two weeks during the follow up examination. The prognosis was very good with proper aftercare and owner compliance. Activity was limited for six weeks with no running, jumping, or playing with other cats in order to avoid post-operative complications including luxation, implant loosening or femoral fracture. The owners were instructed to prevent jumping and keep Flame indoors, confined to a crate or small room with non-slip surfaces.

At six weeks, pelvic radiographs were obtained. Flame was doing very well, and recheck radiographs revealed stable implant positioning with solid bone-cement interfaces. At this time, he was allowed to return gradually to a more normal activity level, and the client was advised to avoid activities that may result in a fall indefinitely, to prevent luxation or femoral fracture, and to alert their veterinarian about infections or dental procedures in the future, so prophylactic antibiotics could be administered. The American Academy of Orthopaedic Surgeons states: "Given the potential adverse outcomes and cost of treating an infected joint replacement, the AAOS recommends that clinicians consider antibiotic prophylaxis for all total joint replacement patients prior to any invasive procedure that may cause bacteremia."¹⁰ Flame was prescribed yearly examinations to monitor function and implant integrity.

AVST Instrument and Equipment List

Steam: pre-vacuum autoclave with cycle settings: 270°F, 17-20 psi, 4-minute cycle.

Linen Pack: Sterilized by manufacturer

- (4) 24" x 32" quarter drapes
- (1) 8' x 6' blue paper overdrape
- (1) OR instrument table cover
- (10) 4x4 gauze sponges (radiopaque)
- Suction tubing
- Plastic irrigation bowl

Disposables: Sterilized by manufacturer

- (2) #15 surgical blades
- Monopolar electrocautery pencil
- Bi-polar electrocautery forceps
- (2) Half dose Surgical Simplex™ P bone cement
- (2) Converters® Drapes (60in x 76in)
- (2) Plastic ophthalmic incise drapes (121cm x 129cm)

General Surgical Pack: Sterilized with steam, double wrapped in KenVet Drape

- (8) Backhaus towel clamps
- Curved Mayo scissors
- Curved Metzenbaum scissors
- (2) Mayo-Hegar needle holders
- (1) Allis tissue forceps
- (2) Brown Adson thumb forceps
- (2) Bard-Parker #3 handle
- (3) Halstead mosquito curved hemostats
- (3) Curved Kelly hemostats
- #7 Frazier suction tip
- Sharp/blunt OR scissors

Biomedtrix Micro THR CFX™ Set: Sterilized steam, double wrapped in blue polypropylene sheets

- Femoral neck template
- Acetabular trials: 12mm, 14mm, 16mm
- Femoral stem trials: #2, #3
- Femoral head trials: 8mm+0, 8mm+2
- Micro stem impactor
- Femoral reamers: 1-2, 2-3
- (2) Awls
- Mead mallet

Additional steam sterilized instruments:

- Elevators: Adson, A-O, Freer
- Retractors: baby Gelpi, finger Hohmann, finger Meyerding, Senn
- Stefan Bone reduction forceps
- Hall's 3M high speed burr and nitrogen cable
- Stryker oscillating sagittal saw
- Double layer small stockinette
- Jacob's hand chuck and key
- Co-flex bandaging tape
- Single action Lempert rongeur

Quality Control Methods

- Class 1 external chemical indicator tape; steam: Comply™ indicator tape
- Class 5 / Other internal chemical indicator strips; Steam: Comply™ SteriGage,
- Chemical indicator strips were placed in the least accessible/most dense part of the pack or inside the innermost wrap or pouch

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Academy of Veterinary Surgical Technicians

Small Animal Advanced Surgical Skills Form - Form 3

The applicant is required to state whether or not he/she has mastered the skills on this form. **Be sure to fulfill all requirements listed for each skill.** For example, (minimum of 4), you must reference 4 different case log entries to authenticate that particular skill/skill number. The AVST is aware that some states or provinces may not allow a task to be performed by a credentialed veterinary technician. The AVST requires that a Veterinary Technician Specialist (of any specialty) or a veterinarian who has mastered the skill attest to your mastery of each skill on this form. Your testifier **must** sign at the bottom of the form to validate their initials throughout the form. If the testifier signing and validating any particular skill is a veterinary surgeon, ensure their name is also listed as the primary clinician in your case log summary or on your case report.

Mastery is defined as possessing an outstanding skill or having expertise. The applicant must be able to perform the task safely, with a high degree of success, and without being coached or prompted. Mastery requires having performed the task in a wide variety of patients, situations, and many times.

Aseptic Technique

A VTS (Surgery) plays an integral role in maintaining asepsis under a variety of conditions. Aseptic technique is described as a set of specific practices and procedures performed under carefully controlled conditions with the goal of minimizing contamination by pathogens.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
1	Demonstrate maintenance of asepsis in the OR with appropriate use of surface disinfectants and contact times			
2	Demonstrate maintenance of asepsis in the OR with appropriate use of various types of antiseptics and contact times			
3	Demonstrate asepsis in the OR with appropriate OR conduct while acting as a circulating nurse (e.g. pouring sterile lavage, issuing sterile items, passing between sterile field and adjacent sterile personnel) (<u>minimum of 2</u>)			a. b.
4	Demonstrate asepsis outside of the OR for a variety of procedures (<u>minimum of 2</u>) (e.g. sterile gloving for wound care, use of personal protection equipment to prevent spread of contagious pathogens)			a. b.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
5	Perform a surgical hand scrub using a water-based scrub (e.g. 2% chlorhexadine scrub)			
6	Perform a surgical hand scrub using an alcohol-based scrub (e.g. Avagard™, Sterillium®)			
7	Perform open gloving technique			
8	Perform closed gloving technique			
9	Perform assisted gloving technique			
10	Demonstrate proper OR technique in the event of contamination (e.g. use of sleeves, re-gloving, re-gowning techniques)			

Operating Room Techniques

A VTS (Surgery) must be able to perform successfully in a surgical suite to reduce the overall time of the procedure, reduce contamination, and maintain the patient's well-being as the highest priority.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
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CIRCULATING NURSE DUTIES:

11	Properly set-up an OR and possess anticipatory skills regarding needed equipment and instrumentation for a wide variety of soft tissue procedures (<u>minimum of 4</u>) (e.g. abdominal, thoracic, perineal, urogenital, endocrine, integument, head/neck and aural)			a. b. c. d.
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	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
12	Properly set-up an OR and possess anticipatory skills regarding needed equipment and instrumentation for a variety of orthopedic and/or neurologic procedures (<u>minimum of 4</u>) (e.g. fracture repair, TPLO, corrective osteotomies, hemilaminectomies, ventral slots)			a. b. c. d.
13	Properly set-up an OR and possess anticipatory skills regarding needed equipment and instrumentation for minimally invasive surgical procedures (e.g. laparoscopic, arthroscopy, MIPO, C-Arm/fluoroscopy guided procedure- minimum of 2)			a. b.
14	Properly set-up an OR and possess anticipatory skills regarding needed equipment and instrumentation for ophthalmic surgical procedures (e.g. enucleation, blepharoplasty, phacoemulsification)			
SCRUB NURSE DUTIES:				
15	Possess anticipatory skills and demonstrate appropriate tissue handling and/or passing of instrumentation while assisting the surgeon during abdominal procedures			

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
16	Possess anticipatory skills and demonstrate appropriate tissue handling and/or passing of instrumentation while assisting the surgeon during thoracic procedures			
17	Possess anticipatory skills and demonstrate appropriate tissue handling and/or passing of instrumentation while assisting the surgeon during orthopedic and/or neurologic procedures			
18	Possess anticipatory skills and demonstrate appropriate tissue handling and/or passing of instrumentation while assisting the surgeon during minimally invasive procedures			

Equipment

A VTS (Surgery) must have knowledge of various equipment specific to surgery, including proper applications, identification, care, maintenance, and troubleshooting.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
19	The ability/knowledge to set-up, maintain, and troubleshoot various types of equipment used for orthopedic and neurologic surgery (<u>minimum of 4</u>) (e.g. nitrogen powered equipment, battery powered equipment)			a. b. c. d.

	Skill	Mastered (Date observed)	Signature of DVM/VTs	Reference Case #(s)
20	The ability/knowledge to set-up, maintain, and troubleshoot various types of equipment used for arthroscopic surgery (<u>minimum of 4</u>) (e.g. video/picture capture devices, arthroscopic shaving devices, fluid delivery systems and camera and arthroscope handling)			a. b. c. d.
21	The ability/knowledge to set-up, maintain, and troubleshoot various types of equipment used for laparoscopic and thorascopic surgery (<u>minimum of 4</u>) (e.g. video/picture capture devices, insufflation devices/equipment, and suction/lavage systems)			a. b. c. d.
22	The ability/knowledge to set-up, maintain, and troubleshoot equipment used for class IV, CO2 and diode laser surgery (e.g. appropriate PPE, signs, laser tips, suction)			
23	The ability/knowledge to set-up, maintain, troubleshoot and understand indications for various stapling or vessel sealing equipment (<u>minimum of 4</u>) (e.g. LDS, GIA, EEA, TA, Ligasure™, Surgiclip™, Hemoclips)			a. b. c. d.
24	The ability/knowledge to set-up, maintain, troubleshoot, and understand indications for electrocautery units			

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
25	The ability/knowledge to set-up, maintain, troubleshoot, and understand indications for portable or central suction units and suction instrumentation			

Instrumentation

A VTS (Surgery) must demonstrate advanced knowledge in the application or use of all surgical instrumentation, including care and maintenance.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
PROCEDURE SPECIFIC INSTRUMENTATION:				
26	Identify, maintain, and explain indications of specific soft tissue surgical instrumentation for a variety of soft tissue procedures (<u>minimum of 4</u>) (e.g. Satinsky clamps, doyens, right angled clamps, ameroid constrictors)			a. b. c. d.
27	Identify, maintain, and explain indications of orthopedic and/or neurologic surgical instrumentation for a variety of procedures (<u>minimum of 4</u>) (e.g. ronguers, burrs, elevators, dural hooks, drill sleeves, drill guides, taps and countersinks, various screw, IM pin sizes and types)			a. b. c. d.
28	Identify, maintain, and explain indications for specific ophthalmic instrumentation (e.g. speculums, Castroviejo needle holders, lacrimal cannulas, Iris scissors)			
29	Identify, maintain, and explain indications for joint replacement instrumentation (e.g. power equipment types, reaming devices, cemented vs. non cemented uses)			

Surgical Instrument Care and Sterilization Methods

A VTS (Surgery) must have knowledge of various sterilization methods. Sterilization is the process of destroying all microorganisms in or on a given environment to prevent infection.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
30	Know products and application recommendations for enzymatic vs detergent cleaning of surgical instruments			
31	Know application, maintenance, and troubleshooting of ultrasonic cleaners			
32	Know appropriate application of products used for the lubrication of surgical instruments			
33	Know appropriate use, application and disposal of products used for high-level disinfection of surgical instruments (e.g. glutaraldehyde, OPA)			
34	Set-up, load, maintain, troubleshoot, and know how to assess sterility when using either ethylene oxide or hydrogen peroxide gas plasma sterilization			
35	Set-up, load, maintain, troubleshoot, and know how to assess sterility when using steam sterilization			

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
36	Obtain certification for use of either ethylene oxide or hydrogen peroxide gas plasma sterilization (<u>*provide a copy of the certificate after skills list</u>)			
37	Demonstrate proficiency in preparing surgical packs using class II wraps (drape materials made of paper, linen or SMS polypropylene)			
38	Demonstrate proficiency in proper use of peel pouches (plastic/paper combinations) for individually processed items, including double pouch techniques			
39	Demonstrate knowledge of shelf life of sterile goods for various sterilization methods (<u>minimum of 2</u>) such as EO, hydrogen peroxide gas plasma, or steam			a. b.
40	Perform a biological test for any type of sterilizer and evaluate the results			

Surgical Procedures

A VTS (Surgery) must have a diverse surgical procedure knowledge base. A surgical procedure is a medical procedure involving an incision with instruments performed to repair damage or arrest disease in a living body.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
	PATIENT PREPARATION AND POSITIONING:			
41	Perform an appropriate surgical clip and aseptic prep application on intact epithelium			
42	Perform an appropriate surgical clip and aseptic prep application on torn or denuded epithelium			
43	Identify the appropriate anatomic landmarks for various soft tissue surgical procedures (<u>minimum of 4</u>) (e.g. adrenalectomy, thyroidectomy, perineal hernia) including performing an appropriate surgical clip, aseptic prep application and properly positioning the patient for surgery			a. b. c. d.
44	Identify appropriate anatomic landmarks for various orthopedic and/or neurologic procedures (<u>minimum of 4</u>) (e.g. ligament repair, joint replacement, ventral slot, hemilaminectomy), perform an appropriate surgical clip, aseptic prep application, and properly position the patient for surgery			a. b. c. d.
45	Identify appropriate anatomic landmarks for various minimally invasive procedures (<u>minimum of 4</u>) (e.g. laparoscopic cryptorchidectomy or liver biopsy, arthroscopy, C-Arm/fluoroscopy guided procedures), perform an appropriate surgical clip, aseptic prep application, and properly position the patient for surgery			a. b. c. d.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
46	Identify appropriate anatomic landmarks for various ophthalmologic procedures (<u>minimum of 2</u>) (e.g. enucleation, eyelid mass removal, periocular mass) and perform an appropriate surgical clip, aseptic prep application, and properly position the patient for surgery			a. b.
SURGICAL CARE EXPERTISE:				
47	Demonstrate an advanced knowledge of various types of soft tissue procedures (<u>minimum of 4</u>) including, but not limited to: abdominal, thoracic, perineal, urogenital, integument, endocrine, head/ neck and aural procedures			a. b. c. d.
48	Demonstrate an advanced knowledge of various methods used for orthopedic and/or neurologic procedures (<u>minimum of 4</u>) such as using minimally invasive or external fixation techniques (e.g. external ring fixators), ORIF (e.g. plating or IM pin fixation), tenotomy or neurectomy procedures and/or joint replacement techniques			a. b. c. d.
49	Demonstrate knowledge of orthopedic surgical procedures utilizing allograft products or autograft techniques			
50	Demonstrate an advanced knowledge of various types of minimally invasive surgical procedures (<u>minimum of 4</u>) (laparoscopic, arthroscopic, etc.)			a. b. c. d.
51	Demonstrate an advanced knowledge of ophthalmic surgical procedures			

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
52	Identify various suture patterns and indications (<u>minimum of 2</u>)			a. b.
53	Demonstrate knowledge of the appropriate use of various suture materials (<u>minimum of 2</u>) in different procedures, tissue layers or organs			a. b.
54	Demonstrate knowledge of intraoperative coagulation aids (e.g. Surgicel®, Gelfoam®)			

Bandaging and Wound Management

Bandages are materials used to protect, immobilize, compress, or support a wound or injured area of the body. A VTS (Surgery) must possess knowledge in external coaptation methods and wound care techniques.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
55	Demonstrate knowledge regarding the phases of wound healing and proper wound management			
56	Demonstrate knowledge of moist wound healing and different primary layers available (e.g. calcium alginate, polyurethane, honey, hydrogel)			
57	Identify bandage materials and properly place a variety of bandages (<u>minimum of 2</u>) including, but not limited to: tie-over bandages, Robert Jones, modified Robert Jones, and wet-to-dry bandages			a. b.
58	Demonstrate an advanced knowledge of and indications for coaptation, including proper placement of splints and casts			

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
59	Evaluate a variety of bandages (<u>minimum of 4</u>) and demonstrate knowledge of potential complications			a. b. c. d.
60	Perform a proper wound lavage and select an appropriate solution or product for wounds			
61	Demonstrate the proper care of skin grafts or flaps			
62	Evaluate surgical wounds and incisions for potential complications (e.g. seroma, infection, dehiscence)			
63	Demonstrate knowledge and appropriate use of novel wound treatment therapies (biotherapy [e.g. maggots or leeches], hyperbaric oxygen chamber, class IIIa or IIIb low level laser therapy [LLLT])			
64	Maintain and know the indication for passive and active/vacuum assisted drains (<u>minimum of 2</u>)			a. b.

Pharmacology and Laboratory

A VTS (Surgery) needs to understand indications and usage guidelines for a variety of antimicrobial agents used in the perioperative period.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
65	Demonstrate indications and appropriate use of peri-operative antibiotics of different classes. (e.g. beta-lactams, flouroquinolones, etc.) (<u>minimum of 2</u>)			a. b. .
66	Demonstrate indications and appropriate use of antimicrobials used for topical wound management and/or burns			

	Skill	Mastered (Date observed)	Signature of DVM/VTs	Reference Case #(s)
67	Demonstrate indications and appropriate use of time-released antibiotic impregnated gels/liquids (e.g. Clinzgard®, R-Gel)			
68	Demonstrate proper tissue handling of samples submitted for histology (e.g. formalin ratios, inking or labeling margins)			
69	Demonstrate proper specimen handling of fluid and tissue samples collected for culture and cytology			

Personal Safety

Maintaining an individual's safety is imperative while working in a surgical environment.

	Skill	Mastered (Date observed)	Signature of DVM/VTs	Reference Case #(s)
70	Demonstrate proper radiation safety and the importance of limited exposure			
71	Demonstrate proper fluoroscopy/C-Arm safety in a surgical setting			

Adjunct Surgical Skills

A VTS (Surgery) needs to be well rounded and have advanced knowledge and skills in other areas considered pivotal in the management of surgical patients.

	Skill	Mastered (Date observed)	Signature of DVM/VTs	Reference Case #(s)
72	Demonstrate advanced knowledge and ability to obtain high-quality diagnostic orthopedic radiographs for a variety of procedures (<u>minimum of 2</u>)			a. b.

	Skill	Mastered (Date observed)	Signature of DVM/VTS	Reference Case #(s)
73	Demonstrate use of interventional radiology techniques (e.g. tracheal stent placement, fluoroscopy-assisted closed fracture reduction)			
74	Demonstrate knowledge, indications for and ability to care for and maintain chest tubes			
75	Demonstrate knowledge and ability to place purse string and/or finger trap suture			
76	Demonstrate knowledge and use of stem cell therapy			
77	Demonstrate knowledge and capabilities to perform industry accepted modalities of rehabilitation (e.g. heat therapy, cryotherapy, low level laser therapy [LLLT], extra-corporeal shock wave therapy [ESWT])			
78	Demonstrate advanced knowledge of at least <u>4</u> different methods of providing analgesia under a variety of circumstances (e.g. regional/epidural, parenteral, transdermal, local)			a. b. c. d.

Anatomy and Physiology Knowledge

To assist in surgery, a VTS (Surgery) must have a thorough understanding of the structures of the body and how they function. Throughout your logs and case reports we should be able to see that you have advanced knowledge of anatomy and physiology related to each surgical procedure (as outlined in skills 11-14) and be able to identify potential complications and post-operative considerations for each.

The AVST Small Animal Advanced Surgical Skills validation form follows on next page:

Waiver, Release and Indemnity

Form - 4

I hereby submit my credentials to the Academy of Veterinary Surgical Technicians (AVST) for consideration for examination in accordance with its rules and enclose the required application fee. I agree that prior to or subsequent to my examination the AVST Credentials Committee may investigate my standing as a technician, including my reputation for complying with the standards of ethics of the profession. I understand and agree that the application fee shall be nonrefundable.

I agree to abide by the decisions of the AVST Credentials Committee and thereby voluntarily release, discharge, waive and relinquish any and all actions or causes of actions against the Academy of Veterinary Surgical Technicians and each and all of its members, committees, officers, examiners and assigns from and against any liability whatsoever in respect of any decisions or acts that they may make in connection with this application, the examination, the grades on such examinations and/or the granting or issuance, or failure thereof, of any certificate, except as specifically provided by the Constitution and Bylaws of this organization. I agree to exempt and relieve, defend and indemnify, and hold harmless the Academy of Veterinary Surgical Technicians, and each and all of its members, committees, officers, examiners and assigns against any and all claims, demands and/or proceedings, including court costs and attorney's fees, brought by or prosecuted for my benefit, extended to all claims of every kind and nature whatsoever whether known or unknown at this time. I further agree that any certificate which may be granted and issued to me shall be and remain the property of the Academy of Veterinary Surgical Technicians.

I certify that all information provided by me on the application is true and correct. I acknowledge that I have read, understand and agree to abide by the above two paragraphs.

(Signature)

(Date)

(Please print your name)

CONTINUING EDUCATION RECORD

Form 5

Date(s) of Conference:

Name of conference, meeting, etc:

Organization or Person providing the CE:

Speaker Name	Credentials	Title of Presentation	Hours
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Total Time _____

Type of CE:

Continuing education programs **MUST** be presented by a VTS member (in any of the specialty academies), a veterinary diplomate of an American or European college, or other qualified speakers as outlined in the AVST Application Packet (page 6). You **MUST** list the CE provider's **diplomate/credential** status (DACVS, DACVAA, DACVIM, DECVS, VTS, etc.) on the CE form. **Failure to include the speaker's credentials will result in those hours being rejected.**

To: Supervising Veterinarian or Veterinary Technician Specialist mentor:

This letter has been presented to you by a credentialed veterinary technician currently employed at your facility who has an interest in pursuing membership in the Academy of Veterinary Surgical Technicians (AVST). In order to achieve this objective your technician will complete a two-step process of submitting an application packet for approval by the credentials committee and sitting for a comprehensive examination. Successful completion of both steps will earn your technician the title of Veterinary Technician Specialist in Surgery. A technician with VTS (Surgery) certification demonstrates superior knowledge in the care and management of veterinary surgical cases while promoting patient safety, consumer protection and professionalism.

The application process is especially time consuming and your technician will need your support and guidance throughout the process. I recommend that you read the entire application packet to become familiar with the areas in which your technician will require your assistance. Listed below are some areas of the application that are particularly important as well as some suggestions and guidelines to assist you in helping your technician prepare an application for submission.

- All cases contained in the case log must be performed **within the year** prior to the application deadline of December 31.
- All cases must be performed at the facility where the technician is employed or while under the supervision of the employer at a different location (i.e., your clinic performs an MRI at a different location, but you and your technician are still in charge of the case and perform the surgery).
- Allow your technician to assist in developing a surgical plan from start to finish. The technician should be able to anticipate the needs of the surgeon in performing the surgical procedure, including instrumentation, equipment, suture, aseptic technique, post operative care, bandages, diagnostics, etc. that is specific for each surgical case and discuss with you why they selected each instrument, piece of equipment, suture, bandage, radiographic view, etc.
- The AVST requires that a licensed veterinarian or VTS member attest to the technician's ability to **master** the required percentage of **skills** on the AVST Advanced Surgical Skills Form. Mastery is defined as being able to perform the task safely, with a high degree of success and without being coached or prompted. Mastery requires having performed the task in a wide variety of patients and situations.
 - Look over the skills list completely and **only** sign off on a skill if you feel confident that your technician meets the definition of mastery.
 - All signed skills must be demonstrated in the case logs.
 - Assist your technician in acquiring new skills for the application process.
- Send your technician to at least one national meeting a year to give them ample exposure to the most current information related to surgery and allow them to accumulate continuing education credits.

On behalf of the Academy of Veterinary Surgical Technicians, I would like to thank you for supporting your technician through the application process. If you have any questions, please do not hesitate to contact me at avst.sxtech@gmail.com.

Sincerely,

Cathy T. Mann, RVT, VTS (Surgery)

Cathy T. Mann, RVT, VTS (Surgery)
Past President of the Academy of Veterinary Surgical Technicians

Academy of Veterinary Surgical Technicians Application Checklist

PLEASE INCLUDE A COPY OF THIS CHECKLIST IN YOUR APPLICATION PACKET
**YOU MUST PLACE EACH ITEM BELOW IN YOUR APPLICATION PACKET IN
EXACTLY THE FOLLOWING ORDER:**

- 1. Professional History and Experience Form. **(Form 1)**
- 2. Photocopy of your current in-date license, registration, or certification and photocopy of your diploma (if applicable) from an AVMA approved program.
- 3. Case Log of at least 50 cases, but not more than 75. **(Form 2)** Include the AVST Abbreviation List.
- 4. Four Case Reports – include the Case Log number.
- 5. AVST Small Animal Advanced Surgical Skills Form. **(Form 3)** Include a copy of the ethylene oxide or hydrogen peroxide gas sterilization certificate for skill #36
- 6. Waiver, Release and Indemnity Agreement. **(Form 4)**
- 7. Continuing Education Record for each meeting attended. **(Form 5)**
 - a. At least 40 hours, but not more than 20 hours from in-house/online.
 - b. Proof of attendance should follow each meeting page.
 - c. Providers credential status must be listed for all speakers.
- 8. Include your letter of intent and curriculum vitae, and two letters of recommendation. One of the letters must be from an ACVS/ECVS diplomate or a VTS member (any academy). The second letter must be a veterinarian testifier from your skills list.
- 9. Include the \$50.00 application fee made out to the AVST. Provide a **copy of your PayPal receipt** if you paid the application fee online or include **a check** for \$50.00 payable to “AVST Treasurer.” If enclosing a check as payment, please put it in a separate envelope labeled “AVST PAYMENT” and place it on top of the 5 copies of your application packet.
- 10. FIVE (5) copies of your application packet professionally bound or secured in a binder.

Mail all copies of your application packet to:

**ACADEMY OF VETERINARY SURGICAL TECHNICIANS
6516 MONONA DR. # 246
MADISON, WISCONSIN 53716**

All applications must be postmarked on or before February 1, 2021.