

**A MASSIVE THIGH HEMATOMA FROM FEMORAL ACCESS: A CHALLENGE IN A
RESOURCE-LIMITED CENTER****Oguamanam O. Enwere^{1*} and Ernest N. Anyabolu^{1,2}**¹Department of Medicine, Faculty of Medicine, Imo State University, Orlu, Nigeria.²Division of Nephrology, Department of Medicine, Chukwuemeka Odumegwu Ojukwu University, Awka, Nigeria.***Corresponding Author: Dr. Oguamanam O. Enwere**

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ABSTRACT

Background: Repeated femoral cannulations may lead to aneurysm, hematoma and sepsis. Very extensive thigh hematoma needing vascular reconstruction are rare. But would pose a challenge in a human and material resource-limited setting. **Findings:** The patient was a 54-year-old woman who has ESRD from ADPKD and was on maintenance hemodialysis. She could not obtain an A-V fistula because the nearest center that offered it was dysfunctional at the time. Following repeated femoral cannulations from different dialysis centers, she developed a massive right thigh hematoma and subsequently an extensive thigh wound sepsis. Nevertheless, following conservative management by the Surgery Unit, the wound made a remarkable progressive healing. However, she later died of uremia as she could no longer afford the cost of maintenance dialysis. **Conclusion:** This case of a massive thigh hematoma and an extensive thigh wound sepsis in an ESRD patient on maintenance hemodialysis shows the challenge of the risk of hematoma and sepsis and in the event of indication for reconstructive vascular surgery.

KEYWORDS: Femoral cannulation, thigh hematoma, wound sepsis, hemodialysis, ESRD, Nigeria.**INTRODUCTION**

Patients on maintenance hemodialysis ideally should have vascular access creation. This would eliminate or minimize the complications inherent in repeated cannulations. Sometimes patients present with hemorrhage at puncture sites post-dialysis at the emergency department due to high pressures during dialysis.^[1] Hematomas can also result from iliac vessel lacerations.^[2] Infrequently, venous fibrosis and arterial aneurysms may also result in hematoma. Retroperitoneal hematomas from femoral catheterizations may also occur but are rare.^[3,4] A prevesical hematoma complicating femoral catheter access for hemodialysis has also been reported.^[5] Increased bleeding tendency in the uremic patient is multifactorial, but is attributed to platelet dysfunction.^[1] Small hematomas may resolve with time. Extensive hematomas, which can be fatal,^[6] may need medical intervention using vasopressin, blood volume restoration and sometimes vascular reconstruction.^[1] Both minor and huge hematomas may become infected and pose a dual edge problem. This infection and thrombotic complications are commoner for femoral catheterization when compared to subclavian venous catheterization.^[7]

Here is documented a case of a massive right thigh hematoma from repeated femoral cannulations needing

vascular reconstruction surgery but was managed conservatively because of the absence of the later.

CASE PRESENTATION

The patient, a 54-year-old woman has End Stage Renal Disease (ESRD) from Autosomal Dominant Polycystic Kidney Disease (ADPKD), complicated by recurrent pyelonephritis, and grossly impaired renal function. She was placed on thrice weekly hemodialysis and received antibiotics. Following repeated femoral vein cannulations for vascular access for hemodialysis at different centers including peripheral ones she developed a right thigh hematoma for which she received blood transfusion before she presented to our care.

The surgery unit of our hospital co-managed this case. Over several weeks they could not explore the lesion due to absence of vascular surgeons in our center. The patient declined suggestions for referral to centers where human resources were available. Subsequently, she developed superimposed right thigh infection. The wound sepsis was quite extensive that it marred optimal dialysis. The wound broke down. The wound was debrided and wound dressing carried out twice daily. Other treatments she received included blood transfusion, antibiotics and hemodialysis. Calcium carbonate, vitamin D3, hematinics were also given. She could not afford the cost

for further maintenance hemodialysis and subsequently died of uremia.

Results of her last laboratory investigations includes

Serum creatinine 950 μ mol/l, serum urea 17.3mmol/l, serum chloride 74mmol/l, serum potassium 2.9mmol/l, serum sodium 138mmol/l, serum bicarbonate 15mmol/l. Full blood count showed a total white blood count

11,200cells/ml, neutrophils 70%, lymphocytes 28% and basophils 2%. ESR 98mm in 1st hour (Westergreen), platelets 210,000cells/ml.

Her prescribed medications included: Hydrallazine 50mg TID, α -methyldopa 500mg TID, Frusemide 80mg OD, VitB complex 1 BID, Astyfer 1 OD, Tacrolimus 1mg OD, Seveleamar 1 OD.

BP 140/100mmHg. Renal sonography showed numerous non-enhancing cysts of varying sizes in both kidneys.



Figure 1: Picture of patient showing enlarged right thigh from hematoma.



Figure 2: Picture of patient showing right thigh wound sepsis.

DISCUSSION

In patients on maintenance hemodialysis, semi-permanent or permanent vascular access is usually created to facilitate hemodialysis. This vascular access include arteriovenous fistula (AVF), arteriovenous graft (AVG) and tunneled jugular catheters. AVF and AVG are not readily available in many local centers. Similarly, semi-permanent jugular catheter access is relatively available but most ESRD patients cannot afford the cost. As a result, some patients, just as our index patient, on maintenance hemodialysis have repeated erratic femoral

vein cannulations. The use of the femoral vein for hemodialysis access is commonly employed for emergency hemodialysis.^[3-6] Occasionally, the superficial femoral artery is utilized for temporary dialysis vascular access when the central venous network is stenotic or obstructed.^[8]

This index patient visited different dialysis centers and, for each dialysis a femoral cannulation was done by different cadre of staff. It was during this process she developed a massive hematoma from femoral arterial

puncture. Some arterial bleeding may be potentiated by anticoagulant dosing and bleeding tendency in uremia as well as the higher pressures in the femoral artery.^[1] Repeated femoral venous and arterial cannulations can result in aneurysm formation and hematoma.^[1,9]

Hematomas are amenable to surgery. When it is due to arterial leak, and extensive, a good doppler evaluation and early treatment with blood replacement, vasopressin and cryoprecipitate are helpful.^[1] However, vascular reconstruction is an appropriate intervention in severe and unresponsive cases.^[1]

In this index patient, vasopressin was not available but only whole blood transfusion and, the surgeons did not consider surgery as they were not prepared for reconstruction. Nonetheless, even without hematoma exploration the hematoma got infected with very extensive wound sepsis that progressively resolved with conservative local wound debridement and antibiotic management. Infection of a hematoma site is known to complicate further management of such patients.^[10]

CONCLUSION

This case of a massive right thigh hematoma and extensive wound sepsis in an ESRD patient on maintenance hemodialysis with repeated femoral cannulations shows the dilemma of a resource-limited center. It shows that ESRD patients, due to poor financial situation, do not readily go for AVF/AVG/semi-permanent access creation and are therefore, prone to grave complications from repeated femoral cannulations, especially in local centers.

Informed consent of patient relative

Patent's relative agreed to have her data used for this publication

Conflict of Interest

None

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