

PERIANAL ABSCESSSES

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ABSTRACT

Background: Perianal abscess is frequently encountered in the Baquba teaching hospital in Emergency department. **The aim** is to assess the clinical pathology, microbiology, treatment outcome surgery of perianal abscess. **Patients and methods** this study was conducted in Baquba teaching hospital from December 2016 to November 2017. Sixty three patients with perianal abscesses. Detail history, proper physical examination and investigations are done then patient prepared for surgery. **Results:** This prospective study included sixty three patients with perianal abscess, the age range between 1 to 80 years(mean age 42.38 years), peak incidence in third and fourth decade of life. male patients predominance fifty seven (90.5%) and female patients six (9.5%). majority of patients (86.3%) have no co morbidity disease while (12.7%) associated with co morbidity diseases like diabetes mellitus, malignancy and on chemotherapy. Fifty(79.4%) patients presented with first time thirteen(20.6%) patients presented with recurrence. All patients treated surgically under general anesthesia. Bacteriological cultures revealed 88.9% only single micro-organism which is Escherichia coli. combined Escherichia coli and staphylococcus aureus represent 6.3% of cases. Staphylococcus aureus only 3.2% of cases, Escherichia coli, staphylococcus aureus, and Pseudomonas 1.6% of cases. **Conclusion:** Perianal abscess can occurred in any age peak incidence in 3rd and 4th decade of life and more common in male than female 10:1 commonest causative microorganism in this study Escherichia coli then staphylococcus aureus, so the source of infection is gut and all patient treated with surgery by cruciate incision and drainage under general anesthesia or spinal anesthesia.

KEYWORDS: Perianal abscess.

INTRODUCTION

Perianal abscess represents an infection of the soft tissues surrounding the anal canal, with formation of a discrete abscess cavity. The severity and depth of the abscess are quite variable, and the abscess cavity is often associated with formation of a fistulous tract.^[1] Perianal abscesses and fistulas represent ano rectal disorders arising predominately from the obstruction of anal crypts. Normal anatomy demonstrates anywhere from 4-10 anal glands drained by respective crypts at the level of the dentate line. Anal glands normally function to lubricate the anal canal. Obstruction of anal crypts results in stasis of glandular secretions and, subsequently infected, suppuration and abscess formation within the anal gland results. The abscess typically is formed in the intersphincteric space and can spread along various potential spaces.^[2] An anorectal abscess originates from an infection arising in the crypto glandular epithelium lining the anal canal. The internal anal sphincter is believed to serve normally as a barrier to infection passing from the gut lumen to the deep perirectal tissues. This barrier can be breached through the crypts of Morgagni^[3], which can penetrate through the internal sphincter into the intersphincteric space. Once infection gains access to the intersphincteric space, it has easy

access to the adjacent perirectal spaces. Extension of the infection can involve the intersphincteric space, ischiorectal space, or even the supralelevator space. In some instances, the abscess remains contained within the intersphincteric space.^[4] The classic locations of anorectal abscesses listed in order of decreasing frequency are as follows: perianal 60%, ischiorectal 30%, intersphincteric 5%, supralelevator 4%, and submucosal 1%.^[2,11] On digital rectal examination (DRE), a fluctuant, indurated mass may be encountered. Optimal physical assessment of an ischiorectal abscess may require anesthesia to alleviate patient discomfort otherwise it limits the extent of the examination. Patients with an intersphincteric abscess present with rectal pain and exhibit localized tenderness on DRE. Physical examination may fail to identify an intersphincteric abscess. Although rare, supralelevator abscesses present a similar diagnostic challenge. As a result, clinical suspicion of an intersphincteric or supralelevator abscess may require confirmation through computed tomography (CT) scanning, magnetic resonance imaging (MRI), or anal ultrasonography. Use of the last modality is limited to confirming the presence of an intersphincteric abscess.^[5] The occurrence of perianal abscesses in infants also is quite common. The exact mechanism is poorly

understood but does not to be related to constipation. Fortunately, this condition is quite benign in infants, rarely requiring any operative intervention in these patients other than simple drainage.^[6] Male are affected more frequently than female with male-to-female predominance of 2:1 to 3:1.^[1] A higher incidence of abscess formation appears to correspond with the spring and summer seasons.^[4] While demographics point to a clear disparity in the occurrence of anal abscesses with respect to age and sex, no obvious pattern exists among various countries or regions of the world. direct relationship between the formation of anorectal abscesses and bowel habits, frequent diarrhea, and poor personal hygiene remains unproved.^[7] As a rule, the presence of an abscess is an indication for incision and drainage. Watchful waiting while administering antibiotics is inadequate.^[8] Common organisms implicated in abscess formation include *Escherichia coli*, staphylococcus aureus, Enterococcus species, and *Bacteroides* species.^[9,10]

Aim of the study

To assess the clinical pathology and microbiology and to assess the treatment and outcome surgery.

Patients and methods

This study was conducted in Baquba teaching hospital in emergency department from Decembers 2016 till November 2017. which include sixty three patients who were presented with perianal abscess. They were admitted to emergency unit and examined according demographic aspect of patient including: age, gender, region, occupation, social habit. Clinical aspect of patients with perianal abscess checked including: chief complaint, duration, first or recurrent attack, history of

frequent bowel motion, anal wash and pruritus, history of co morbidity diseases like diabetes mellitus, jaundice, uremia, immunosuppressant like malignancy, chemotherapy, tuberculosis and Cohn's disease.

Thorough examination of patients include Systemic examination like chest and abdomen and local examination of perianal abscess was done for site and location and divided in to four quarter anterior, posterior, right and left. Also for any swelling, induration, tenderness and fluctuation, full investigation for all patients. at operative theater under general anesthesia site of operation was sterilized by using povidone iodine. pus aspirated and send for culture and sensitivity test. cruciate incision done pus drained part of wall of abscess sent for histopathology. abscess cavity irrigated by normal saline, gauze drain left in cavity, patient discharged after 24 hours after removal of gauze drain day, The patient teach to change dressing daily keep good local hygiene & follow up is encouraged every other weeks. Antibiotics prescribed according culture & sensitive result.^[5]

RESULT

The total number of patients in this study was sixty three patients. age ranges between 1 year and 80 years (with age mean 42.38%). Those patients above 40 years 27 patients (39.7%) and 36 below 40 years (60.3%). The most common age group between 21-30 years 17 patients (27.0%) followed by 31-40 years (22.2%) 14 patients. So peak incidence of perianal abscess in this study in the third and fourth decade of life. The male patients 57 (90.5%), female patients 6 (9.5%). male are effected more than female with male to female predominance ratio 10:1.

Table. 1: Show age distribution of patient with frequency and percentage.

Age	Age	Frequency	Percentage%	Cumulative Percentage %
Valid	1-10	4	6.3	6.3
	11-20	3	4.8	11.1
	21-30	17	27.0	38.1
	31-40	14	22.2	60.3
	41-50	10	15.9	76.2
	51-60	8	12.7	88.9
	61-70	4	6.3	95.2
	71-80	3	4.8	100.0
	Total	63	100.0	

Table. 2: Show Gender Predominance Ratio.

Sex	Frequency	Percentage	Cumulative Percentage %
Female	6	9.5	9.5
Male	57	90.5	100.0
Total	63	100.0	

Co morbid diseases found in 8 patients constituting (12.7%). and 6 patients have diabetes mellitus (9.5%) of total numbers of patients which constituting (75%) of co morbid diseases 2 patients (3.2%) has malignancy and on chemotherapy forming (25%) of co morbid diseases.

Table. 3: shows frequency and percentage of co morbidity diseases diabetes mellitus, malignancy and on chemotherapy.

	Diseases	Frequency	Percentage %	Valid Percentage %	Cumulative Percentage %
Valid	Diabetes mellitus	6	9.5	75.0	75.0
	malignancy and on chemotherapy	2	3.2	25.0	100.0
	Total	8	12.7	100.0	
	No co morbidity diseases	55	87.3		
Total		63	100.0		

Fifty patient (79.4%) were presented for the first time while 13 patient (20.6%) presented with previous symptom of diseases (second time). Location of each perianal abscess anterior about three quarter 48 cases (76.2%), posterior 11cases (17.5%), left 4 cases(6.3%) right not present. all 63 cases treated surgically under general anesthesia.

Table. 4. shows frequency and percentage of first and previous symptom (2nd time) of perianal disease.

		Frequency	Percentage %	Valid Percentage %	Cumulative Percentage %
Valid	First	50	79.4	79.4	79.4
	Second time	13	20.6	20.6	100.0
	Total	63	100.0	100.0	

Table. 5. Shows frequency and percentage of location and site of perianal disease.

		Frequency	Percentage %	Valid Percentage	Cumulative Percentage %
Valid	Anterior	48	76.2	76.2	76.2
	Posterior	11	17.5	17.5	93.7
	Left	4	6.3	6.3	100.0
	Total	63	100.0	100.0	

According to the types of microorganism were isolated from abscess of 63 patients, *Escherichia coli* was predominant microorganism in 56 (88.9%), 2 cases(3.2%) staphylococcus. aureus, 4 cases (6.3%) *Escherichia coli* and staphylococcus aureus, 1 case (1.6%) *Escherichia coli*, staphylococcus. aureus and pseudomonas species.

Table. 7. shows frequency and percentage of microorganisms in perianal abscess.

		Frequency	Percentage %	Valid Percentage %
Valid	E.coli	56	88.9	88.9
	Staph. Aurous	2	3.2	3.2
	E.coli-staph aurous	4	6.3	6.3
	E.coli-,staph.aurous-pseudomonus	1	1.6	1.6
	Total	63	100.0	100.0

All results were returned from the histopathological department shows pyogenic membrane of an abscess, no granuloma, no malignancy found. Recovery time was 6 weeks as an average and follow up for 4 months.

DISCUSSION

Perianal abscess can occur at any age. In our study the age arranged from 1 year to the 80years and mean age (42.38%) so no age are immune against perianal abscess, peak incidence in third and fourth decade of life also no obvious pattern exists among various countries or regions can occur in patient in rural and urban area. The causes of perianal abscess suspected to originate as anal cryptitis which progresses to form perianal abscess.^[12] In pediatric it has been postulated that androgen excess or androgen-estrogen imbalance may cause the formation of abnormal crypts of Morgagni with predisposition to cryptitis and abscess formation.^[13] gender incidence in this study was 57 cases male(90.5%) and 6 cases female(9.5%), male predominance with male to female

ratio 10:1 in compare to other studies done in Taiwan Chan Gung Memorial Hospital, Lin Kou 4:1.^[14] Also other study in surgical unit, The Royal London Hospital, found the ratio 8:1.^[15] Association with Co morbid diseases are significant risk factor for development of abscess especially in presence of devitalized and necrotic tissue^[16] the presence of pre-existing tissue necrosis in hyperglycemic environment would provide excellent condition for bacterial proliferation.^[17] In this study 6 patients (9.5%) has diabetes mellitus and 2 cases (3.2%) has malignant diseases and on chemotherapy, so total constituting (12.7%).They are immune-suppressive diseases, patient with these diseases are more prone and liable to get infection and abscess formation, progression of local infection to surrounding tissue and development

of serious and fatal gangrene and necrotizing fasciitis are recorded.^[18] But in our study no progressive and spreading infection were recorded. all of them are eventless post operatively.

Fifty cases (79.4%) were presented for the first time and 13 cases (20.6%) had history of previous attack(all of them treated either conservative or surgical under local anesthesia), About location of abscess anterior about three quarter 48 cases (76.2%), posterior were 11cases (17.5%), left 4 cases(6.3%) these term more accurate and less susceptible to misinterpretation as the orientation of the clock face changes with the different position of patient and examiner.

The treatment of perianal abscess should be treated in a timely fashion by cruciate incision and drainage.^{[19][20]} The drainage were performed as close to the anus as possible to shorten the length of any possible subsequent fistula tract. In addition to adequate drainage, one should endeavor to prevent acute recurrence of an abscess by either excising the skin edge, inserting a drainage catheter, or placing a loose seton.^[21] After successful drainage of a perianal abscess, pain relieves. Instruct patients to use hot water, bulk-forming fiber laxatives, and analgesics, oozing and discharge usually subside within a few days. The wounds should heal over a matter of a few weeks. follow-up is encouraged because acute abscess recurrences occur in 10%.^[22]

Mechanical disruption of loculations in and around an abscess cavity may be sparingly used to ensure adequate drainage of all collections. Although this practice is frequently taught, loculations are rarely encountered clinically and little evidence exists to support its use. As this maneuver may cause injury to the sphincter complex or pudendal nerve, it should be used selectively.^[23] Antibiotics are an unnecessary addition to routine incision have not been shown to improve healing times or reduce recurrence rate and give according to culture and sensitive.^[24] Prophylactic antibiotics should be considered for patients with high-risk conditions such as immunosuppression, diabetes mellitus, extensive cellulitis, prosthetic devices and high-risk cardiac and valvular diseases^[25] In this study the result of culture reveal *Escherichia coli* is predominant single aerobic microorganism (88.9%) of patients in compare to other study (81%).^[14] other (11.1 %) mixed microorganism, (3.2%)of patient staphylococcus aureus, (6.3%)of patients *Escherichia coli*, and staphylococcus aureus, (1.6%) of patient *Escherichia coli*,- staphylococcus aureus and pseudomonas. So most cases of perianal abscess presented with *Escherichia coli*, predominance followed by staphylococcus aureus. So main source of infection from gut then exogenous infection. The first choice antibiotic for aerobes and anaerobes was determined to be augmentin/ cefazolin and metronidazol respectively, in severe infection amikacin is preferred according to culture and sensitive media.

Histopathological result shows pyogenic membrane of an abscess, no granuloma no malignancy, although we have 2cases with malignancy and on chemotherapy (hematological disease leukaemia one case and Burkitt's lymphoma there was no histological result with malignancy and this goes with other study in university of Arizona health science center 140 cases with perianal abscess 94% male and 6% female patients cured in average time of 6 week^[26] and other study done in surgical unit –the Royal London Hospital were 60 patient present with perianal abscess no granuloma no malignancy result of histopathology^[27]

CONCLUSION

Perianal abscess can occur at any age. In our study the age arranged from 1 year to the 80years and mean age (42.38%) so no age are immune against perianal abscess, peak age distribution in third and fourth decade of life. gender incidence in this study was 57 cases male(90.5%) and 6 cases female(9.5%), male predominance with male to female ratio 10:1 Fifty cases (79.4%) were presented for the first time and 13 cases (20.6%) had history of previous attack(all of the previous attack treated either conservative or surgical under local anesthesia). *Escherichia coli* was the predominant single aerobic microorganism (88.9%) of patients. other (11.1 %) mixed microorganism, (3.2%)of patient staphylococcus aureus, (6.3%)of patients *Escherichia coli*, and staphylococcus aureus, (1.6%) of patient *Escherichia coli*,- staphylococcus aureus and pseudomonas. So most cases of perianal abscess presented with *Escherichia coli*, follow by staphylococcus aureus.so the main source of infection from gut then exogenous infection. Histopathology revealed pyogenic membrane of an abscess, no granuloma or malignancy although we have 2cases with malignancy and on chemotherapy.

RECOMMENDATION

1. Good anal hygiene.
2. Removal of hair around anal cavity.
3. Early diagnosis and treatment by incision and drainage to prevent recurrent attack.
4. Operation should be done under regional or general anesthesia to allow adequate exposure and opening all loculations.
5. Carefully drainage done by expert surgeon to avoid injury to the sphincter complex or pudendal nerve during complete evacuation.
6. Colonoscopy should be used if there is underlying pathology.e.g Crohn's disease.
- 7.No indication for antibiotic therapy except in patient with high-risk condition such as immune compromise, diabetes mellitus, extensive cellulites, prosthetic devices and high – risk cardiac and valvular disease.
8. Follow –up is encouraged to detecting recurrences acute perianal abscess which may reach 10%.

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