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patients irrespective of treatment offered and addition of antibiotics could shorten the healing time in cases with primary skin closure. Various flap procedures employed in treating pilonidal sinus disease have produced varying outcomes.[2,] Senapati and colleagues followed 218 patients for three years after the Bascom's operation which they preferred because it is simple and is done on ambulatory basis with significant cost savings and early return to work. They did not find their recurrence rate to be higher than alternatives. The classic rhomboid flap (Limberg) treatment is associated with flap necrosis and recurrence. The modification of this technique employing an oval flap by Polat and colleagues would appear to have less flap ischemia and recurrence and the use of drains is not mandatory and can be substituted by fibrin glue. Sinusectomy is another simple procedure involving excision of the tract as a day procedure, avoiding large disabling wounds with recurrence of 5% and allowing an early return to work.

CONCLUSION

Pilonidal sinus disease is rare in Africans but presents with features and challenges similar to the disease in Caucasians. Recurrence is common after treatment irrespective of the procedure employed. A simple but effective operation as in our index case is preferred as it allows for ambulatory care.

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cover. The sinus bearing portion of the skin and subcutaneous tissue was widely excised through an elliptical excision and the cavity curetted and the wound packed with gauze soaked in honey. The honey dressing continued till the wound granulated and healed secondarily. Culture of pus grew no organisms but the histology of the excised skin revealed granulation tissue lined tracts in the skin. Five months after the operation she had a mild episode of similar symptoms which responded to a combination of oral ceftriazone, metronidazole and ketoprofen.

Pathology

Pilonidal sinus disease is common in Caucasians and rare in Africans. Its pathology is related to midline pits in the skin overlying the sacrococcygeal region which communicate with a granulation tissue lined cavity in the subcutaneous tissue containing loose hair which are thought to be central in the pathogenesis of the disease. It is considered to be acquired, though congenital sinuses are also possible. Repeated infection of the cavity through the tract is responsible for its chronicity and abscess formation. It is thought that repeated trauma to the natal cleft drives hair into the subcutaneous tissue and eventually a tract is formed which communicates with the cystic cavity. Tight clothing is suspected to contribute to driving hair into the subcutaneous cavity; and our index patient was observed to prefer tight trousers or skirt. The common organisms cultured from pilonidal abscess are bacteroides and anaerobic cocci in greater than 70%.

Clinical Presentation

Pilonidal sinus disease predominantly affects males with a peak incidence after adolescence till age 40. Obesity, being hairy, poor personal hygiene, sedentary occupation and a dark skin colour appear to promote the development of a sinus. The rarity of the disease in blacks is unexplained; under-reporting of cases may be contributory. The disease may be asymptomatic but typically presents as a painful midline swelling with discharge of pus. An abscess follows infection of the tract and present with afluctuant, warm and tender swelling over the sacrococcygeal region which is often recurrent and may extend into either or both buttocks. Fever and a painful swelling overlying the sacrum are the most common complaint when an abscess develops. The differential diagnoses for pilonidal sinus disease are as in Table 1.

Table 1: Differential Diagnoses of Pilonidal Sinus

S/no.	Diagnosis
1.	Anal fissure
2.	Hidradenitissuppurativa
3.	Pyodermagangrenosum
4.	Congenital lesions ex. Presacral sinus, inclusion dermoid and sacrococcygeal sinus

Management

The optimal surgical treatment for pilonidal sinus disease, judged by primary wound healing and recurrence, is unknown. Many procedures, which could be simple or complex, are described and practiced but none fully satisfies all the idealcriteria for treatment of the disease (See Table 2). Pilonodalabscess are managed by incision and drainage, broad spectrum antibiotics and analgesics leading to resolution of symptoms; extensive procedures are not recommended. Patients are advised against putting on tight fitting clothing or sitting on hard surfaces to prevent wound complications.

Table 2: Ideal Criteria for Surgery in Pilonidal Sinus Disease

S/no.	Criteria
1.	Easy to perform
2.	Can be done in theambulatory setting
3.	Low recurrence rate
4.	Minimal pain and wound care
5.	Early return to work
6.	Cost effective

Severe and recurrent cases require more extensive procedures. Excision of the sinus alone or with primary suturing is the most common modality of treatment for the sinus. In a randomized trial of excision alone, excision with primary suturing and excision with primary suturing and clindamycin , Zimmermann-Nielsen *et al.* noted that healing without revision surgery or excision of new sinuses occurred in most

Diagnosis of Malaria in Infants: Evaluation of Clinical Signs

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ABSTRACT

Malaria infection during infancy greatly mimics infections caused by other pathogens such as bacteria and viruses. This similarity in symptomatology and clinical presentation of malaria compared to other infections makes its diagnosisparticularly difficult. The objective of this study was to assess the usefulness or not of certain clinical signs in the diagnosis of malaria in febrile infants attending the Children's Emergency Room of the Lagos University Teaching Hospital and General Hospital, Surulere. Three hundred and twenty two consecutively presenting infants who were febrile either at presentation or had a history of fever in the last 72 hours prior to presentation with absence of obvious localizing causes for the fever were recruited into the study between August 2001- February 2002. Each patient had a full history and physical examination and blood samples were obtained for malaria parasite counts and specie identification. Out of 322 infants, one hundred and forty six infants were females and 176 were males giving a M: F ratio 1.2:1.Amongst the clinical signs elicited in the children, only anaemia (haematocrit<33%) showed a significant association with the presence of malaria parasitaemia (P = 0.00035). Calculation of the sensitivity, specificity, positive and negative predictive values for the clinical signs showed no sensitivity for their use in the diagnosis of malaria in infants. Clinical signs such as fever, splenomegaly and hepatomegaly were not found to be useful in this study as an aid in diagnosing malaria in infancy. Anaemia had a significant association with malaria parasitaemia but had a low overall sensitivity as a sign that could be used for diagnosing malaria in infants.

Keywords: Malaria, Infants, Clinical signs

INTRODUCTION

Malaria in infancy, particularly early infancy, had hitherto been regarded as an uncommon entity.[1] The difficulty in the diagnosis of clinical malaria in this age group lies in the similarity in clinical presentation of other disease entities such as sepsis, which are thought to be more common than malaria in infancy.[2,3] Common symptoms and signs associated with malaria infection include fever, vomiting, diarrhea, cough, pallor, splenomegaly, hepatomegaly and jaundice[2] which can also mimic various other disease conditions. This difficulty in distinguishing clinical malaria in infants acts as the impetus for this study. Therefore this study seeks to evaluate the usefulness of certain clinical signs in the diagnosis of malaria in febrile infants attending the Children's Emergency Room of the Lagos University Teaching Hospital and General Hospital, Surulere.

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MATERIALS AND METHODS

This study was carried out in Lagos, a city located in the South Western part of the country on the Atlantic coast. It is a region characterized by low altitude, high rainfall and high humidity and has two seasons; the rainy season which lasts from May to October, and the dry season which extends from November to April. Malaria transmission occurs throughout the year with peaks during the rainy season. Lagos is holoendemic for malaria.
Two sites were chosen for this study; the Lagos University Teaching Hospital and General Hospital, Surulere. These two centers are located in Mushin and Surulere Local Government areas of Lagos State respectively. These two sites were chosen because they represent the spectrum of population distribution of high and medium density areas of Lagos respectively. Population density has an indirect effect on the prevalence of malaria. Areas with high population density have inherent difficulties in the maintenance of good environmental sanitation thereby creating numerous breeding sites for mosquitoes and indirectly increasing the prevalence of the disease. The two Local Government Areas are contiguous and the two hospitals are readily accessible to the inhabitants of Mushin and Surulere. They are the two largest Government

health facilities in the area and therefore draw the largest clientele of low and medium socioeconomic groups.

The study involved consecutively presenting infants aged one day old to twelve months of age, attending the Children's Emergency Room of the Lagos University Teaching Hospital and the Paediatric Outpatient Unit of General Hospital, Surulere and recruited over a period of six months (from August 2001 February 2002). Informed consent was obtained from the parent/guardian of every patient. The study was approved by the hospitals' ethical committees with informed consent from the patients' care givers. Inclusion criteria: (a) all infants who are febrile at presentation or infants with a history of fever up to seventy two hours prior to presentation with fever being defined as an axillary temperature >37.5^{O}C[4] (b) absence any other obvious cause for the fever (localizing signs)likeabscesses, ear infections. Exclusion criteria: all febrile infants with localizing signs.

The definition of malaria for the purpose of this study was based on the following criteria:- (a) history of fever up to 72 hours prior to presentation or fever at presentation and (b) the presence of malaria parasitaemia in the infant. A detailed history and thorough physical examination was carried out for every infant enrolled in the study. Axillary temperature was measured with a mercury thermometer using four minutes of stabilization time. A diagnosis of malaria was considered for every febrile infant in the study pending confirmation of malaria parasitaemia on blood film.

The usefulness of some clinical signs such as fever, anaemia, hepatomegaly, splenomegaly, hepato-splenomegaly as aids in the diagnosis of malaria in infants were tested using sensitivity, specificity, positive predictive value and negative predictive value. One ml of venous blood was obtained from the patients for examination for malaria parasites and for haemoglobin estimation.

Examination of the peripheral blood smear was used in this study because it remains the current universal "Gold Standard" for the diagnosis of malaria.[5] It is a very reliable method as a parasite count as low as one per microlitre can be detected in a thorough (at least ten minutes) examination of the thick film, [6] hence it's use in this study. Parasite density was also estimated for each patient.

RESULTS

Table 1 shows the clinical characteristics of the infants including their mean ages, mean weights, sex distribution and clinical parameters on presentation. One hundred and forty six infants were females and 176 were males (M: F ratio 1.2:1).

Table 1: Clinical Characteristics of Study Infants by Age Group in Months

Characteristics n = no of patients	= 1month (n=22)	1.1-2 (n=23)	2.1-4 (n=40)	4.1-6 (n=52)	6.1-8 (n=66)	8.1-10 (n=52)	10.1-12 (n=67)	P-Value	P-Value
✍ Age	0.6(0.27)	1.67(0.31)	2.96(0.13)	5.38(0.58)	7.49(0.47)	9.45(0.5)	11.6(0.49)	0.00*	0.00(sig)
✍ Weight	3.62(0.74)	4.53(1.48)	6.16(1.09)	6.76(1.11)	7.57(0.45)	7.96(1.03)	8.59(0.98)	0.00*	0.00(sig)
Sex: Female (%)	9(40.9)	14(60.8)	18(45)	24(46)	27(41)	34(65)	20(30)	0.01*	0.01(sig)
Male (%)	13(59.1)	9(39.1)	22(55)	28(54)	39(59)	18(35)	47(70)	0.01*	0.01(sig)

*P = 0.05 statistically significant

Pilonidal Sinus Disease: A Case Report

***Udo I, Umeh K, Akpanudo E**

ABSTRACT

Pilonidal sinus disease affects the posterior anal or sacral region and when infected may present with an abscess. It is rare in Africans and recurrence after surgery is common. The aim of this study is to report the first case of pilonidal abscess managed by drainage and excision of the sinus tractin our surgical unit. This is a case report with review of clinical presentation, pathology and treatment of the disease in a single patient. Result shows successful outcome with drainage of abscess, laying open/excision of sinus tract and oral broad spectrum antibiotics. In conclusion, drainage of the abscess with laying open/excision of the sinus tract is a simple but effective treatment for pilonidal abscess.

Keywords: Pilonidal abscess, sinus tract excision, broad spectrum antibiotics.

INTRODUCTION

Pilonidal sinus disease with its complications is very rare in our practice. The pathology affects the posterior aspect of the anal and sacro-coccygeal region. It is frequent in Caucasians males and uncommon in Africans and Asians. Approximately 20% of the patients present with an abscess and the rest with a chronic discharging sinus. The presenting features in the index case were classical of pilonidal abscess and the management challenging because it was our first time of diagnosing and managing the disease.

Case Report

A 22-year old female presented at the out-patient clinic with a one week history of a painful swelling in her natal cleft which prevented her from sitting up or lying on her back. The pain did not respond to simplenon-prescription analgesics. The swelling had increased in size markedly three days to presentation and this coincided with the period of maximum pain. She had continuous high grade fever associated with chills. She volunteered a history of similar symptoms for which she had undergone incision and drainage twice in the last three months. These produced temporary relief with symptoms recurring within weeks.

She was in severe painful distress with a temperature of 38.5^{o}C. There was a fluctuant swelling overlying the sacrum and coccyx extending into her buttocks, hyperaemic overlying skin, warm to touch and tender with induration extending into her buttocks (see Fig 1).

Figure 1: Pilonidal abscess overlying the coccyx in an Adult Female. Notice the previous incision scar and midline pits (arrows).

Two sinuses were found in the midline of the swelling with their openings blocked by black thick viscid substance. A vertical scar was overlying the swelling to the right of the midline. Rectal examination was unremarkable.

She underwent an open drainage of the abscess under general anaesthesia with antibiotic

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