

## Management of Acute Abscesses in Jos, Nigeria

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### ABSTRACT

**Background:** Acute abscesses are common in the tropical environment. Whereas certain types of abscesses are decreasing in prevalence in the Western world, the situation is quite different in the most developing countries.

**Method:** A prospective study of two hundred (200) acute abscesses managed in 2 years.

**Results:** Majority of the patients, 196 (98%) were low-income earners. Identifiable associated medical conditions were diabetes mellitus, sickle cell anaemia, liver cirrhosis, and acquired Immunodeficiency Syndrome (AIDS). The age range of the patients was 0-80 years (mean 21.6 +/- 15.4 years). There were two peaks of age incidence at less than 10 years, and between 20-40 years. The M: F ratio was 1:1.4. One hundred and sixty patients (80%) had used one type or another of antibiotic before presentation. Breast abscess was the commonest type of abscess seen occurring in 65 patients (32.5%). Lactational breast abscess accounted for 59 (90%) of the breast abscess. The average size of abscesses was 6.02 +/- 1.74cm. Staphylococcus aureus was the most commonly isolated organism, in 170 aspirates (85%); it was sensitive to erythromycin in 140 isolates (82.86%). The prognosis after simple incision and drainage was generally good, with a mortality of 3 (1.5%); 2 of the patients had AIDS and one resulted from a neglected ischiorectal abscess.

**Conclusion:** Improvement in living standards, early presentation and treatment should reduce the incidence, morbidity and mortality from acute abscesses in our environment.

**KEY WORDS:** Abscess, AIDS, incision and drainage, low socio-economic status

### Introduction

Acute abscesses are common in the tropical environment. Whereas certain types of abscesses are decreasing in prevalence in the western world,<sup>1</sup> the

situation is quite different in most of the developing countries such as Nigeria.<sup>2</sup>

The importance of soft tissue abscesses lies in the morbidity, and occasional mortality that they cause. The purpose of this prospective study is

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to determine the current status of acute abscesses in the tropics in terms of distribution, aetiology, and outcome of management.

### Materials and Methods

In a twenty-four month period from 1996 - 1998, a prospective study of acute abscesses presenting to the casualty department of the Jos University Teaching Hospital was carried out.

The information obtained included age, sex and occupation of the patient; site, size, and volume of abscess, prior use of any antibiotic, other associated medical conditions; history of previous abscess and human immunodeficiency virus (HIV) status of suspected cases; blood cultures were done in those having features of septicaemia

Diagnostic aspiration of the abscess was performed with wide bore needles, and the pus sent for microscopy, culture and sensitivity. Only aerobic cultures could be done. Urinalysis for sugar was done for all patients prior to incision and drainage, which was under local anaesthesia using ketamine. Biopsies of the breast abscesses were done in those with residual lumps, recurrence, and in the elderly. All patients were managed post operatively with analgesia, oral cloxacillin on empirical basis and daily dressing of the abscess cavity. Results are presented in simple tables and analysed using student's t-test and chi-square test where appropriate.

### Results

A total of 200 patients with acute abscesses were managed during the study period. The age distribution is shown in table 1. Majority of the patients were

low-income earners. None had a previous history of an abscess. The duration of symptoms was 3-10 days (mean 6.4 days).

The commonest site of soft tissue abscess was the breast, occurring in 65 patients (32.5%). Fifty-nine (90%) of these women were lactating (Table 2). Breast biopsies were done in 4 patients; 2 had residual lumps, one a recurrent abscess and one was abscess in an elderly woman. The histology report revealed an invasive ductal carcinoma in the elderly woman (she subsequently had modified radical mastectomy); the two residual lumps showed acute on chronic mastitis, and the recurrent breast abscess showed mammary duct ectasia.

Gluteal abscess occurred in 45 patients (24.5%), and followed an intramuscular injection in patent chemist shops. There were anorectal abscesses in 26 patients, 18 (69%) of which were perianal; five were associated with low anal fistula. They were subsequently treated by fistulectomy.

One hundred and sixty patients (80%) had used antibiotics prior to presentation; the commonest antibiotic used albeit in inappropriate dosages was ampiclox. The average size of the abscesses was 6.02 +/- 1.7cm (Table 3). *Staphylococcus aureus* was isolated from 170 aspirates (85%) and *Escherichia. Coli* in 10%. The culture was sterile in 20 (10%) aspirates; 15 of these patients had taken antibiotics prior to presentation.

Associated medical conditions identified in some of the patients included diabetes, sickle cell disease, liver cirrhosis and acquired immunodeficiency syndrome (AIDS). The average size of the abscesses was 6.02 +/- 1.7cm (Table 3).

Table 1: Age Distribution of Patients with Abscesses

Age (Years)	No. (%)
0 - 9	49 (24.5)
10 - 19	18 (9.0)
20 - 29	60 (30.0)
30 - 39	58(29.0)
40 - 49	11 (5.5)
50 - 59	2 (1.0)
60 - 69	1 (0.5)
≥70	1 (0.5)
Total	200 (100)

Table 2: Distribution of Abscesses by Site

Site	No. (%)
Breast	65 (32.5)
• lactational 59	
• non lactational 6	
Gluteal	45(22.5)
Anorectal	26 (13.0)
• perianal 18	
• ischiorectal 8	
Head & neck	20 (11.0)
Hand infection	13 (6.1)
Pyomyositis	12 (6.0)
Trunk	8 (4.0)
Axilla	4 (2.0)
Inguinal	3 (1.5)
Pilonidal	2(1.0)
Total	200 (100)

Table 3: Size of Abscesses and Volume of Pus Drained

Site	Size (cm)	Volume (mls)
Pyomositis	10.0 +/- 1.0	45.8
Breast	5.0 +/- 1.5	10.5
Pilonidal	6.3 +/- 1.2	10.2
Gluteal	6.0 +/- 1.5	7.4
Anorectal	4.5 +/- 1.0	6.6
Trunk	4.5 +/- 0.0	5.0
Hand infection	3.4 +/- 0.0	4.8
Head + Neck	4.7 +/- 1.0	4.2
Inguinal	5.0 +/- 0.0	4.1
Axilla	4.0 +/- 0.0	3.4

The average size of the abscesses was 6.02 +/- 1.7cm (Table 3). *Staphylococcus aureus* was isolated from 170 aspirates (85%) and *Escherichia. Coli* in 10%. The culture was sterile in 20 (10%) aspirates; 15 of these patients had taken antibiotics prior to presentation.

Associated medical conditions identified in some of the patients included diabetes, sickle cell disease, liver cirrhosis and acquired immunodeficiency syndrome (AIDS). There were three HIV seropositive patients who presented with multiple discharging abscesses. Two of them later died of complications of AIDS (they were known cases being managed by physicians before developing abscesses). Two patients developed septicaemia, confirmed by culture of *Staphylococcus aureus* from the blood; one, who had an ischiorectal abscess later died from necrotising fasciitis of the perineum.

## Discussion

A wide range of acute abscesses occurs in the tropical environment and is an important cause of morbidity. A total of 200 cases were studied in the present report, an average of 100 cases per year. This probably represents an underestimation as many cases may have been managed in other health institutions within the metropolis. This is similar to the experience of Efem in Calabar.<sup>2</sup>

Breast abscess was the commonest abscess (32.5%) seen in this study; in contrast with reports from other parts of the world where the incidence of breast abscess is low, with Blick et al,<sup>3</sup> and Simms et al<sup>4</sup> reporting figures of 11.3% and 6.6% respectively among European patients. Majority of the breast abscesses (90%) were associated with lactation. This may be attributable to

poor personal hygiene among breast-feeding mothers in our environment who are mainly from a low socio-economic class.<sup>2</sup> Breast-feeding is frequently associated with nipple cracks, which may get infected by bacteria from the mouth of the infant, thereby setting up an inflammatory process in a breast already engorged with a good culture medium (milk). The incidence of non-lactational breast abscess in this study is low similar to the observations of Efem,<sup>2</sup> but lower than in reports from western countries,<sup>3,4</sup> where non-lactational breast abscess is more common. Non-lactational breast abscesses have been associated with heavy smoking in women of high socio-economic class, usually in association with an underlying duct ectasia.<sup>1, 3,5</sup> Smoking leads to an increase in the toxin production in ductal secretions, which may damage the lactiferous ducts.<sup>1</sup> Anaerobic organisms are mostly isolated in this group of patients compared to lactational breast abscess. Only aerobic cultures were done in the present report.

The high association of gluteal abscesses with intramuscular injections in patent medicine shops by unqualified persons attests to the fact that aseptic techniques were probably not observed in the administration of the drugs.

Perianal abscess was the commonest anorectal suppuration. The low incidence of associated fistula-in-ano in this series is similar to a report by Goligher et al.<sup>6</sup> This contradicts the cryptoglandular hypothesis of aetiology of anorectal abscesses by Parks, which suggests that such abscesses are associated with fistula-in-ano.<sup>7</sup> It is possible that such perirectal suppurations may result from colonization of blocked apocrine glands in that area.<sup>8</sup>

The main microbial isolate from the abscesses in this study was

*Staphylococcus aureus* (85%). This is similar to other reports.<sup>2, 9,10</sup> Infection with *Escherichia coli* in anorectal abscesses probably result from contamination from the gut.<sup>11</sup> The appreciable number of sterile abscesses seen in this study (10%), may be due to the fact that 75% of these patients had used antibiotics prior to presentation. This is similar to a report by Simms et al<sup>4</sup> in which cultures were sterile in 85% of patients who had used antibiotics. Although sensitivity tests were done, it was of no practical value as there was no change in antibiotic treatment and it did not affect the outcome of management. Nevertheless, routine culture and sensitivity is appropriate in providing a basis for subsequent antibiotic selection should the infection become uncontrollable. Even then, should antibiotics continue to be given to patients after a simple incision and drainage? Stewart et al<sup>12</sup> demonstrated that there was no significant difference whether antibiotics were given or not. However, more controlled studies are needed in this respect.

The prognosis of acute abscesses after incision and drainage is good. The mortality recorded in this report was mostly due to an underlying disease condition, AIDS and neglected ischio-rectal abscess.

It is concluded that improvement in living standards, early presentation and treatment should reduce the prevalence, morbidity and mortality from acute abscesses in our environment.

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