MANAGEMENT CHALLENGES OF PELVIC ABSCESS IN A TERTIARY HEALTH INSTITUTION IN NIGERIA.

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ABSTRACT

Background: This study was carried out to review the incidence, demographic variables and challenges in managing pelvic abscess in a tertiary health institution, the University of Benin Teaching Hospital, Benin City, Nigeria.

Methods: This was a retrospective study. Gynaecological patients known to have had pelvic abscess over a 14 year period at the Obstetrics and Gynaecology department of the University of Benin Teaching Hospital Nigeria formed the subjects. The retrieved case files were scrutinized for the necessary variables which were then analysed.

Result: Pelvic abscess was surgically confirmed in one in every fifty four major gynaecological operations. The age ranged from 15 - 44 with a mean of 27± 6.0 years. Four out of every five of the patients were in their third and fourth decades of life. The parities ranged between 0 - 6 with a modal parity of 2. About half of the patients were nulliparous. Pregnancy related conditions were associated factors in 57.7% of cases. Sepsis following abortion and pelvic inflammatory disease each accounted for 30.8% of cases. Ultrasound scan as a diagnostic tool gave a sensitivity of 86% and specificity of 70%. Clinical assessment/ impression had a sensitivity of 88.5% and specificity of 70%. All patients had conservative surgery involving laparotomy with drainage of abscess and adhesiolysis of the abscess cavity. There were 2 deaths and both were related to abortion complications.

Conclusion: Conservative surgery with drainage of abscess and adhesiolysis was the treatment of choice after adequate preoperative resuscitation.

Key words: *pelvic abscess; management, challenges, laparotomy, complications.*

INTRODUCTION

Pelvic abscess is the end stage in the progression of a treatable severe upper genital tract infection. It is frequently an unnecessary complication that is very expensive to treat[1-3]. The abscess may fill the pelvis and occasionally extend to the lower abdomen. It is usually posterior to the uterus and bound by the sigmoid colon; loops of small bowel, cul de sac, omentum and side walls of the pelvis[1].

It is estimated that about one hundred and fifty thousand women in North America alone have surgery for pelvic abscess and other complications of pelvic inflammatory disease yearly[4]. However, there is paucity of such studies in Africa and as a result, the incidence of pelvic abscess in our environment is sparsely documented.

The clinical features of pelvic abscess include pelvic pain, pelvic tenderness, fever; increased urinary frequency; painful micturation; painful defecation; diarrhoea, mucous in stool; malaise; anorexia, severe back pain and on physical examination a fluctuant mass filling the cul de sac[5]. Its diagnosis requires a high index of clinical suspicion and appropriate (though sometimes expensive) investigations. Ultrasound scan (abdominal or transvaginal) may aid the clinician in the diagnosis by revealing a fluid collection in the abdomen. Grey scale ultrasound scan has been shown to have a sensitivity of 93.0%; specificity of 98.6%; and an overall accuracy of 96.8%[6]. However, the problem remains that such facilities are not readily available in most of our low resource health institutions.

Although pelvic abscess may be prevented by broad spectrum antibiotics given early in the course of managing the primary pathology, a surgical approach to the management of pelvic abscess is indicated when antibiotics fail[7]. The traditional surgical approaches range from colpotomy to laparotomy which in some cases may include Abdominal Total Hysterectomy and Bilateral Salpingo-Oophorectomy to prevent recurrence. Surgery, being the main thrust of management,

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usually involves a lengthy hospital stay and may be associated with morbidities and mortalities[8].

The use of transvaginal catheter; transrectal catheter; and the transgluteal method (which involves the insertion of a catheter close to the sacrum) for abscess drainage require a high level of skill, precision and imaging techniques that are not readily available in our environment[8-10].

This study was undertaken to determine the incidence and challenges of managing pelvic abscess at UBTH, Benin City, Edo State, Nigeria over a 14 years period.

AIMS AND OBJECTIVES

1. To determine the incidence of pelvic abscess as seen at UBTH.
2. To determine the demographic characteristics and clinical presentation of patients presenting with pelvic abscess at UBTH.
3. To appraise the accuracy of clinical and ultrasound diagnosis and the result of surgical management of pelvic abscess at UBTH.

MATERIALS AND METHODS

This is a retrospective descriptive study, spanning a 14 year period (from 1st January 1995 to 31st December 2008) of all cases of pelvic abscess admitted to the University of Benin Teaching Hospital.

The records in the gynaecological ward and theatre were assessed to obtain the medical records/ details of the affected patients. All the files were subsequently retrieved and relevant data relating to the socio demographic profile of the patient; their clinical presentation; likely predisposing factors; accuracy of ultrasound diagnosis; pre- and intra-operative diagnosis; microbiological cultures; types of complications; management instituted and short term outcome were extracted manually and analysed using the SPSS statistical package.

RESULTS

During the 14 year study period 1414 major gynaecological laparotomies were performed at UBTH. Of these, 33 patients had laparotomy for suspected pelvic abscess, but pelvic abscess was confirmed in 26 cases, giving an incidence of 2 cases per year and 1 in 54 gynaecological operations.

The ages of the patients ranged from 15 to 44 years with a mean of 27 years. 50.0% were in their fourth decade and 80.7% of patients were between 20-39 years. The parity of the patients ranged from 0 to 6 with a mean parity of 1.5. Over half (53.8%) of the patients in this study were nulliparous. Almost one quarter of the patients in this study were primiparous (23.1%). There were equal numbers of single and married women (42.3% each) and over half had at least secondary level of education (Table I).

Lower abdominal pain was the commonest presenting symptom (93.9%). Other common symptoms were fever (69.7%); lower abdominal swelling (48.5%) and vaginal discharge (42.4%). Most patients presented with multiple symptoms (91.0%) (Table II).

The primary pathologies predisposing to pelvic abscess are shown in Table III. Pregnancy related complications accounted for more than half the cases (57.7%). These included post-abortal sepsis (30.8%); emergency Caesarean section (19.2%); manual removal of placenta (3.8%); and a home delivery by an unskilled birth attendant (3.8%). Other causes included pelvic inflammatory disease (30.8%); myomectomy (3.8%); surgery for a ruptured appendix (3.8%); and a bladder tumour (3.8%). Pelvic abscess was found in 8 out of 10 patients who had a clinical suspicion of pelvic abscess and an antecedent history of an abortion. Five (62.5%) had first trimester abortions and 3 (37.5%) had second trimester abortions. All the abortions were induced. Dilatation and curettage was the commonest mode of induced abortion (62.5%). Fifty percent of the patients had prophylactic antibiotic therapy after the procedure and all the patients presented at our hospital more than 7 days after the antecedent abortion (Table IV).

Ultrasound scan was done in 24 cases. The result showed a sensitivity of 86% and a specificity of 70%. Clinical diagnosis alone however showed a sensitivity of 88.5% and specificity of 70%. Of the 7 (21.2%) false positives, 2 (28.6%) were broad ligament haematomas, following an induced abortion and a laparotomy for a ruptured ectopic gestation. Three (28%) were accidented ovarian cysts. The volume of pus drained ranged from 5mls

to 3000mls with a mean of 327mls.

Retroviral screening was done for the patients who presented in the later years of the study. Of the 11 (42.3%) who had retroviral screening done 6 (54.5%) were negative and 5 (45.5%) were positive (Table VI). This is higher than the national and institutional average and may imply an increased incidence of pelvic abscess among retroviral disease positive patients.

Twenty two (84.6%) out of 26 patients with pelvic abscess confirmed at laparotomy had good recovery and were discharged; 2 (7.7%) had recurrence on follow up and there were 2 (7.7%) mortalities due to sepsis. (Table VII)

DISCUSSION

This study showed that laparotomy for drainage is an increasingly preferred method of managing Pelvic abscess at UBTH. The incidence of this method of management showed an increase of almost 50% when compared to an earlier review from the same centre[11]. This was however much lower than incidence compared to some other centres[8].

In this study, the predominance of women in their twenties and thirties is at variance with the younger age groups in previous works[11-13] but similar to findings of pelvic abscess complicating unsafe abortion[14]. This study also reiterates the preponderance of low parity among patients presenting with pelvic abscess[8,11,15]

This study highlights the important role of unsafe abortion and the resulting PID in the pathogenesis of pelvic abscess in this environment. However, abortion predisposing to pelvic abscess accounted for 30.8% of cases in this study in contrast to its higher contribution in earlier reports from our centre[11] and other centres[8,12,15,16]. This may be due to a decreased incidence of unsafe abortion and increased use of appropriate prophylactic antibiotics as well as availability of post abortal care. PID and Caesarean section showed more dominant roles than previously documented. Parturition was still an important risk factor, a reflection of how unsanitary the delivery environment in this part of the world still is.

Results of cultures of specimen showed positive growth in only 8 cases. Prior administration of antibiotics may account for other sterile cultures. Proteus mirabilis, staphylococcus aureus and klebsiella were the most frequently encountered pathogens in contrast with earlier works which showed that E. coli was the most common organism isolated[2,11,17]. Anaerobic and intracellular cultures were not performed on specimens because they were largely not available; we are therefore not able to comment on the role of anaerobes and Chlamydia in these cases of pelvic abscess. Neisseria gonorrhoea was not isolated from any of the patients despite its association with PID. The sero-positive rate for Human Immunodeficiency Virus among the patients tested was markedly higher than those found in other reports [18].

The sensitivity (86.0%) and specificity (70%) of ultrasound scan in the diagnosis of pelvic abscess in this review, though low, is within the range documented by earlier studies[19]. Surprisingly clinical assessment showed similar sensitivity (88.5%) and specificity (70%) to ultrasound scan. This reiterates the benefit of a high index of suspicion; assessment and intervention by senior gynaecologists[8,11,14].

Previous publications from Nigeria in which most cases of pelvic abscess were pregnancy related, advocated conservative surgery consisting of adhesiolysis and drainage of the abscess[11, 12, 15, 16.]. Pelvic abscess was earlier found to be a common indication for laparotomy at the University of Benin Teaching Hospital (UBTH) [11]. An earlier retrospective study at this hospital revealed that all the patients were treated surgically and it was concluded then that surgery involving manual separation of adhesions and drainage of pus was the treatment of choice after sufficient preoperative resuscitation[11].

Some authors considered abdominal total hysterectomy and bilateral salpingo-oophorectomy for pregnancy related pelvic abscess. However, most of our patients were nulliparous, very ill and had severe pelvic adhesions, making this procedure unattractive. By preserving the uterus and its appendages, pregnancy potential exists. This is more so now that assisted reproduction facilities are becoming readily available. Other authors had reported good results with colpotomy, noting simplicity and minimal morbidity of the procedure [20]. However, no colpotomy was done in this series

because of the need to avoid uterine and bowel injury; make an intra-operative diagnosis and gain access to the deep pelvic spaces for effective drainage.

Pelvic abscess challenges the best clinician in diagnosis, pre- and post-operative care. In this study the mean pre-operative hospital admission was 5 days with an average post-operative hospital stay of 22 days. These were similar to the findings of other studies [8, 11]. This mean pre-operative time was the average time it took to arrive at a diagnosis and optimise the patient. Though discouraging, this necessitated the late recourse to surgery as mostly patients were critically ill and required resuscitation and stabilization before surgery. The average postoperative stay as in-patients of 22 days is explained by the delayed recovery of the patients from the acute phase of the illness; management of abdominal drains and wound healing by secondary intention in many cases. The nursing and medical facilities are often stretched to the limit. Blood transfusion and 3rd or 4th generation antibiotic use was often the rule. The economic impact on the patient and her family was often enormous.

The mortality rate of 7.7% in this report was less than that found in an earlier study from this centre but remains unacceptably high when compared to studies from other centres[8, 11].

In conclusion pelvic inflammatory disease and unsafe induced abortion are two important risk factors for pelvic abscess in this study. Pelvic abscess is still a significant cause of morbidity and mortality in our environment. Conservative surgery with drainage of abscess and adhesiolysis was the treatment of choice after adequate, often prolonged, preoperative resuscitation. The deep seated location of the abscesses and scarcity of adequate imaging facilities limit the use of several less invasive modalities of management. Limited use of microbiological cultures makes it difficult to ascertain most causative organisms.

Programmes for syndromic management of STI's; appropriate and proper treatment of PID; reduction in the number of unsafe induced abortions and provision of post abortal care, will help in reducing the incidence, morbidity and mortality associated with pelvic abscess.

TABLE l: Age, Parity And Marital Status Distribution Of The Patients

		Frequency	Percentage (%)
Age:	0 – 9	0	0
	10 – 19	3	11.5
	20 – 29	8	30.8
	30 – 39	13	50.0
	40 and >	2	7.7
Total		**26**	**100.0**
Parity:	0	13	53.9
	1	6	23.1
	2 -4	5	19.2
	=5	1	3.8
Total		**26**	**100.0**
Marital status:	Single	11	42.3
	Married	11	42.3
	Divorced	4	15.4
Total		**26**	**100.0**

TABLE ll: Presenting Symptoms. (see pg. 9)

Presenting symptom	Frequency	Percentage (%)
Lower Abdominal Pain	31	93.9
Abdominal Swelling	16	48.5
Fever	23	69.7
Vomiting	11	33.3
Vaginal Discharge	14	42.4
*Multiple symptoms	30	91.0

*Most patients presented with multiple symptoms

TABLE lll: Frequency Distributi on Of Abortion, Deliveries, Operations, STI/PID And Other Predisposing Factors To Pelvic Abscess.**(See Pg. 9).**

Factor	Frequency	Percentage (%)
Abortion	8	30.8
Delivery	7	26.9
Total	15	57.7
Operation: Caesarean Section	5	19.2
Myomectomy	1	3.8
Manual removal of the placenta	1	3.8
Appendicectomy	1	3.8
Total	8	30.8
STI/PID: Yes	8	30.8
Pelvic tumour	1	3.8

TABLE lV: Frequency Distribution Of Presentation At UBTH After Termination Of Pregnancy.

Duration after termination of pregnancy before presenta tion	Frequency	Percentage (%)
< 7 days	0	0
>7 days	8	100.0

TABLE V: Frequency Distribution Of Accuracy Of Ultrasound And Clinical Diagnosis

	Ultrasound scan		Preoperative Diagnosis		Intraoperative Diagnosis	
Diagnosis	**Frequency**	**%**	**Frequency**	**%**	**Frequency**	**%**
None	2	7.7	0	0	0	0
Wrong	5	19.2	7	21.2	7	21.2
Correct	19	73.1	26	78.8	26	78.8
Total	**26**	**100**	**33**	**100**	**33**	**100**

TABLE Vl: Frequency Distribution Of Retroviral Status Of Patients.

Retroviral status	Frequency	Percentage (%)
Negative	6	54.5
Positive	5	45.5
Total	**11**	**100**

15 patients (57.7%) had no retroviral screen results as retroviral screening was not done in the earlier cases. Sero-positivty was found in the later cases.

TABLE Vll: Result of Treatment.

Results	Frequency	Percentage (%)
Well and dischar ged	22	84.6
Problem recurred	2	7.7
Died	2	7.7
Total	**26**	**100**

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