

# Percutaneous ultrasound guided drainage of abdominal abscesses

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**Abstract:** Intraabdominal abscesses are common surgical pathologies that result from a myriad of causes and require a high index of suspicion to diagnose. Majority of the patient's present critically ill requiring surgical drainage. The traditional open surgical drainage is associated with a high morbidity and mortality. Percutaneous ultrasound guided drainage which entails either needle aspirations or image guided catheter placements for a thick abscess is a suitable alternative to open surgical drainage. This study was aimed at evaluating our experience with ultrasound guided percutaneous drainage of intraabdominal abscesses in a Teaching hospital in north central Nigeria. Methodology Consecutive patients diagnosed to have intraperitoneal abscesses in a general surgery unit at Jos University Teaching Hospital over a 24 month period were studied. Results Twenty four patients were involved in this study. There were 14 males and ten females giving a male to female ratio (M: F =1.4:1). The mean age of the study population was 40+/- 19.3 with age range of 10-70years. Ten patients (41.7%) had abscesses in the liver, 6(25%) in the pelvis and 5(20.8%) were sub-phrenic in location, 3(12.5%) were psoas abscesses. Fifteen patients (62.5%) had their abscesses drained by needle aspiration while the remaining 9 (37.5%) were drained through placement of Foley's catheters. There was no mortality in this study. In conclusion, percutaneous ultrasound guided drainage of abdominal abscesses is a viable alternative to open surgical drainage.

**Keywords:** Abdominal Abscess, Drainage, Percutaneous, Ultrasound

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## 1. Introduction

Intraabdominal abscesses are common life threatening surgical pathologies that could occur spontaneously or as a complication of abdominal pathologies and surgical procedures.(1-5) Common as they are however, a high index of suspicion is needed to clinch the diagnosis and cross sectional imaging techniques like ultrasound and CT Scans are very useful in this regard.(6,7) Most patients with intraabdominal abscesses are usually very ill and toxic, and of poor anaesthetic risk. (8,9) Surgery in these patients is traditionally carried out via the open access (laparotomy) technique which is associated with a high morbidity from adhesions and residual abscesses and a high mortality.(10,11) Percutaneous ultrasound guided drainage of abdominal abscesses presents itself as a safer and less invasive method of draining these abscesses in these critically ill patients. The technique entails either needle aspirations or image guided catheter placements for thick

abscesses.(12,13) The advantages of this method include reduced morbidity and mortality from anaesthesia and trauma of open surgery; it also ensures faster return to work and is comparatively cheaper (13-15). These advantages make percutaneous image guide drainage of abscesses a suitable procedure in resource scarce settings. This study was therefore aimed at evaluating our experience with ultrasound guided percutaneous drainage of intraabdominal abscesses in a Teaching hospital in north central Nigeria.

## 2. Main Body

### 2.1. Patients and Methods

This was a prospective study of consecutive patients diagnosed to have intraperitoneal abscesses in a general surgery unit at Jos University Teaching Hospital over a 24 month period (January 2009-December 2010).

Consecutive patients with intraperitoneal abscesses were assessed both clinically and radiologically and their

suitability for drainage was determined before recruitment into the study. All patients with clinical suspicion of intraperitoneal abscess had abdomino-pelvic ultrasound scans done by the authors to confirm and localize the abscess and determine its suitability for percutaneous drainage. Exclusion criteria; Patients with abscesses that were multiple, multi-loculated, interloop, thick-walled abscesses (exceeding 1cm) and those with generalized peritonitis were excluded from this study. Data obtained included the age, sex, location of abscess, predisposition to abscess formation, method of drainage, volume of pus drained and complications. Data was analysed for means and standard deviations using Epi-info version 3.5.2

## 2.2. Results

A total of Twenty four patients were involved in this study. There were 14 males and ten females giving a male to female ratio (M: F =1.4:1). The mean age of the study population was 40+/- 19.3 with age range of 10-70years. Ten patients (41.7%) had abscesses in the liver, 6(25%) in the pelvis and 5(20.8%) were sub-phrenic in location, 3(12.5%) were psoas abscesses. Nine patients (37.5%) had no predisposition to abscess formation, 9 (37.5%) had post-operative abscesses and 3 (12.5%) were HIV positive, and another 3(12.5%) were from Tuberculosis.

In Fifteen patients (62.5%), abscesses were drained by needle aspiration while the remaining 9 (37.5%) were drained through placement of Foley's catheters (see fig.1).



*Fig. 1. percutaneous ultrasound guided drainage of a left psoas abscess*

The average volume of pus drained was 817+/- 650ml. Sixteen patients (66.7%) were on hospital admission while 8(33.3%) were done as day cases.

One patient (4.2%) had generalized peritonitis complicating aspiration and required emergency exploratory laparotomy while the others were discharged home in good clinical condition.

There was no mortality in this study.

## 2.3. Discussion

This study shows that liver abscesses were the most common location for intraabdominal abscesses. This may be due to the fact that we are in a tropical low resource setting with the attendant poor food hygiene and relative water scarcity which predispose to amoebic liver abscesses. This agrees with the reported work of Bozkurt et al where liver abscesses were the most common accounting for 45.2% of the abscesses drained (16)

This study also revealed that abscesses complicating abdominal surgical operations (post-operative) were equally common. This is because most abdominal surgical operations in this research were performed for pathologies associated with sepsis like bowel perforations. This finding is in consonance with that of Gerzof et al who had post-operative abscesses accounting for 66.7% of their patients.(6) This study also reveals that with careful selection, abdominal abscesses in different locations can be safely drained with care not to injure adjacent viscera or blood vessels. That this procedure can be carried out on day care basis in patients that are not so ill after initial observation attests to its safety and simplicity in a carefully selected patient population.

## 3. Conclusion

Percutaneous ultrasound guided drainage of abdominal abscesses is a viable alternative to open surgical drainage.

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