

Incision, Drainage Of Soft Tissue Abscesses Followed By Primary Closure With Suction Drain Under Antibiotic Cover

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A total of fifty patients with soft tissue abscesses were managed by incision curettage and primary closure. Suction drainage was employed in all the cases under antibiotic cover. Upper arm was the most common site (44%) while Staphylococci were the commonest organisms isolated, in (54%) of cases. The mean healing time was 8.4 days. Twelve (24%) developed complications that included persistent infection, recurrence and discharging sinus. A case is made for the use of this technique for acute abscesses as an alternative to conventional methods of treatment.

Soft tissue abscesses have traditionally been managed by incision curettage and open drainage with a belief that closure of wound could result in recurrence. However, this mode of treatment has several disadvantages. The patient has to undergo repeated dressings and uncomfortable packing of wound. As the wound takes a long time to heal, the patient has to remain out of work, leading to considerable economic burden. Furthermore, the cosmetic outcome is far from ideal. To circumvent these disadvantages, we employed the method of primary closure of wound after drainage of abscess. We describe our experience along with a brief review of literature.

Patients & Methods

Fifty patients, were included in the study conducted over one year period at North Surgical Ward, Mayo Hospital Lahore. A clinical diagnosis after history and examination was made. All abscesses with diameter of 10 cms or less were included in the study. X-Rays were done to exclude involvement of the underlying bone. Diabetics, immunocompromised patients and those with perineal abscesses were excluded from the study. Blood complete, urinalysis, blood sugar, urea, and electrolytes were routinely checked in all cases.

Every patient received an appropriate dose of cloxacillin prior to surgery. The procedure was carried out under local or general anaesthesia depending upon the site and size of abscesses. The antibiotic was changed according to culture and sensitivity report of pus and continued for 5-7 days after surgery. Abscesses were drained under sterile conditions. Pus was taken for culture and sensitivity. All the loculi were broken and curettage done. The cavity was washed with normal saline or Hydrogen per oxide if required. After securing haemostasis a redivac suction drain was placed which was removed after 48-72 hours and the patient discharged from the hospital. A follow up was arranged on the 7th post operative day to examine the wound for any evidence of haematoma, cellulitis, dehiscence or purulent discharge.

In case of any such event the stitches were removed and pus allowed to drain freely.

Results

Out of "50" patients treated in this study "28" (56%) were male & 22 (44%) were female. (Table 1)

Table : 1

	n=	%age
Total patient	50	
No of Male patients	28	56
No of female patients	22	44

Age of patients ranged from 4 years to 59 years. (mean = 31.5 years) (Table 2)

Table : 2

Age in Years	n=	%age
11-20	8	16
21-30	12	24
31-40	6	12
41-50	7	14
51-60	2	4

Most Common Site of abscess was the upper arm because of the intramuscular injections. The gluteal region was the next common site followed by breast. (Table 3)

Table : 3

Site	No. of Patients	%age
Arm	22	44
Gluteal region	8	16
Breast	7	14
Forearm	6	12
Leg	5	10
Head and Neck	2	4

Staphylococcus aureus was the commonest organism in 27 patients (54%). In 18 patients (36%), no growth could be

Table : 4

Organism	n=	%age
Staphylococcus	27	54
Bacteroides	3	6
Proteus	1	2
Streptococcus	1	2
No growth	18	36

obtained probably due to antibiotic therapy before surgery. Healing time was minimum in Head and Neck abscesses: (6.5 days) followed by leg abscesses: (7.2 days)(Table 5)

Table : 5

Site	Mean Healing Time (days)
Head & Neck	6.5
Leg	7.2
Arm	7.8
Forearm	8.2
Breast	9.8
Thigh	11.3
All Abscesses	8.4

Persistent infection was seen in 2 patients (4%) & only 5 (10%) developed recurrence.(Table 6)

Table : 6 Complications

Type	n=	%age
Persistent infection	2	4
Discharging sinus	5	10
Recurrence	5	10

Discussion

The conventional method of treatment of an abscess involves open drainage. In 1951, Ellis introduced a method of treating soft tissue abscesses in emergency by incision, drainage and primary suture under antibiotic cover.¹ Wilson, Benson and Goodman further confirmed the efficacy of this method.^{2,3} A prospective randomised study comparing incision and drainage with incision, curettage and primary suture was undertaken by Leaper et al in "219" patients with anorectal abscesses.⁴ They found the method of incision drainage, curettage and primary suture to be superior in terms of time taken to heal and period lost from work. Moreover, the risk of recurrence of the abscess was not high.

The rationale of this technique is based on the concept that the wall of an abscess, which consists of granulation tissue, is impermeable to antibiotics circulating in blood. Once the granulation tissue barrier is breached, antibiotics begin to enter the abscess cavity. This allows circulating antibiotics to gain free access to any residual infection⁵.

Ellis elaborated three important points in his technique. Firstly the patient's blood should be loaded with penicillin by means of an intramuscular injection given 1 hour before the collection was to be drained. Secondly the wall of the abscess should be destroyed by curettage to allow free bleeding into the cavity and thirdly the cavity should completely be obliterated by stitches.⁶ We modified this technique by applying suction drainage instead of coapting sutures, which keeps on draining any collection of pus or blood for 48-72 hours till antibiotics have sterilized the cavity. The success of treatment depends upon correct surgical technique. The abscess wall must be broken down to let the antibiotics reach the affected tissue. Optimum results are obtained if incision is

made before the abscess points. Skin necrosis takes place if pointing is allowed to occur. The use of poultices to encourage pointing with subsequent necrosis is strongly contraindicated as there will delay in healing and a poor final cosmetic result⁵.

It has been seen in pyomyositis abscesses that, primary closure of abscess cavities showed hastened healing with a reduced morbidity provided that all infected and non viable material in curetted in the presence of antibiotic laden blood.⁷ This concept has been further extended to treat nonlactational breast abscesses by repeated aspirations without any incision so as to avoid the need for prolonged dressings following open drainage⁸ The healing that follows with a shortened hospital stay, minimum of attendences for dressing and early return to active life has obvious economic benefits^{2,3,9}.

In our study the mean healing time for all abscesses was 8.4 days. This is comparable to similar study done by Jones and Wilson⁹. Similarly recurrence rate of 10% is comparable to another comparative study by Macfie showing healing time to be more or less the same as compared with open drainage¹⁰. The cosmetic results have been very encouraging and in addition, the method described has been found to be both practicable and acceptable to the patient. There has been no serious complications with this method⁶. We recommend the method of primary closure after incision and curettage under antibiotic cover as it has all the advantages of early discharge, comfortable post operative course, early return to work and a much better scar.

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