ORIGINAL ARTICLE

Comparison of Packing and Primary Closure in Surgically Drained Skin Abscesses in Terms of Frequency of Healing

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ABSTRACT

Aim: To determine the frequency of wound healing using primary closure after incision and drainage versus packing in surgically drained skin abscesses in both genders.
Study design: Randomized Controlled Trials.
Place and duration of study: PNS Shifa Karachi from 28 Sep 2010 to 27 Mar 2011.
Methods: A total of 60 patients were randomly divided into two groups of 30 patients each using random numbers table. One group was treated by primary closure, while packing was performed in other group followingincision and drainage (I & D) under local anesthesia. Both groups received oral antibiotics and were reviewed on seventh day after surgery to assess wound healing.
Results: A statistically significant higher frequency of healing was observed in primary closure group (56.66%) as compared to packing group (10%). (p value of 0.0001).
Conclusion: Primary closure is feasible to reduce the post-operative healing time in surgically drained skin abscesses.
Keywords: Abscess, Packing, Primary closure.

INTRODUCTION

Skin abscesses are a common occurrence and their incidence transcends the boundaries of age and sex[1] with Staphylococcus aureus being the commonest isolated organism[2]. Treated routinely as a day case[3], there are many areas of debate regarding their treatment[4] like pain control, requirement of culture and sensitivity[5], use of antibiotics and open versus primary closure of wound. Available treatment options include I and D with curettage, I and D without curettage, repeated aspirations of abscess[6-9], I and D followed by packing[10] or primary closure[11]. The conventional way of treating an abscess is incision and drainage followed by packing. This method of treatment by secondary intention causes prolonged healing time, increase number of visits to hospital, cost and pain at the time of pack changing. Another way of treating superficial skin abscesses is by I and D followed by primary closure of the lesion[12,13]. Primary closure of surgically drained skin abscesses shortens the healing time, thus decreasing morbidity of patient and cost of treatment. A study conducted by Abraham N et al revealed that 78% of surgically drained skin abscesses healed by primary intention after 1 week while 3% treated using the open technique healed by secondary intention in a similar period of time[4].

Studies from 1990s show promising results with primary closure of surgically drained skin abscesses but it has never gained popularity because of lack of reassurance from local data (Wound healing was faster; 7.0 days vs. 25.1 days, the number of hospital visits were less; 3.8 visits vs.11.1 and the time off work was shorter; 4.0 days vs.14.1 days in the group treated by primary closure compared with those managed conventionally) [14].

Traditionally, incision and drainage followed by packing is widely practiced in our setup with little experience of primary closure. Current study would help us to find an optimum method of dealing with skin abscesses which can shorten the healing time thus ultimately decreasing patient morbidity and cost.

PATIENTS AND METHODS

These randomized controlled trials were carried out at PNS Shifa Karachi from 28 Sep 2010 to 27 Mar 2011 over a period of six months. Sixty patients included in the study were randomly divided into two groups of 30 each by using random numbers table. All patients between 13-60 years of age of both genders presenting with abscess less than 5 cm in largest diameter, were included in the study. Patients with abscess in hand / perineal region, pilonidal abscessesor havingco-morbid such as diabetes mellitus, immunosuppression and bleeding diathesis were excluded from the study. After approval of

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hospital ethical committee, informed consent was obtained from all the patients. Hospital registration number, name, age, gender, address and phone number (optional) were noted. Patients in Group A were treated by incision and drainage (I&D) followed by primary closure using Prolen while those in Group B were treated by I & D followed by packing under local anesthesia by the same surgical team. Oral antibiotics were administered for five days post-surgery. Patients were followed up on seventh day after surgery to assess healing. Demographic data of the patient, site of abscess, group allocated and status of wound healing on seventh post-operative day was recorded on a specially designed proforma.

Data was analyzed using SPSS software version 19.0. Mean and standard deviation for the Quantitative variable i.e. Age was calculated. Frequency and Percentage was presented for the categorical variable i.e. gender, site of abscess and healing at 7th day. Chi square test was used to compare healing of wound in both groups. P value of < 0.05 was considered as significant.

RESULTS

The study sample comprised of sixty patient, with superficial skin abscess, which were divided into two groups "A" and "B" that underwent incision and drainage followed by primary closure of wound and packing respectively. Fifty seven male (95%)and three female (5%) patients were included. The age distribution ranged from 13-60 years in the study. Mean age in Group A was 33.53 ±14.325years. Mean age in Group B was 38.60 years±12.366years.Group A had 90% males and 10% females. Group B had 100 % males and no female. In Group A, wound healing was achieved in 56.66 % (n=17) of patients on seventh post-operative day as compared to 3(10%) of patients in Group B. The wound was considered healed if it was closed and there was no discharge on 7th post-operative day.

The overall percentage of healed cases was 33.33% (20 patients). The result of the two groups was found to be statistically highly significant with a p value of 0.0001 (less than 0.05).

Table: Comparison of two techniques in terms of healing (p value = 0.0001)

Healing	Group A	Group B
Healed	17(56.66%)	3(10%)
Not Healed	3(43.30%)	27(90%)

DISCUSSION

Our study sample has provided us an opportunity to look into the rate of healing in surgically drained skin abscesses by using two different techniques that are, primary closure and packing. Our sample size was less than a study performed at USA[2] but comparable to a study performed at Australia[4]. The reason for comparatively smaller sample size in our setup is probably that technique of primary closure after draining a skin abscess is not very well supported by our local data and is also not a conventional way of treatment. In addition to this the inclusion criteria was narrowed only to abscesses of less than five centimeters[15] in adults without constitutional symptoms thereby excluding the pediatric population, adults with comorbid[16,17] and abscess in hand or perineum.

In our study the range of age was 13 to 60 years[18]. Out of the 60 patients in our study, male patients constituted 95% and female patients as 5%. The predominant number of males is due to the fact that the study was carried out in a military setting with males forming the main bulk of population. However this may also indicate that in our set up, because of their occupational requirements, male population is more exposed to etiological factors of abscess formation, like minor trauma or insect bites that usually go unnoticed.

In total, 33.33% of the patients achieved healing on 7thpost-operative day. Of these, patients treated with primary closure showed 56.66 % healing as compared to10% in patients treated with packing. These results were very much comparable to the study performed in Australia [4] that showed these figures as 78% and 3% respectively. The results of our study showed that primary closure of skin abscesses after I and D considerably decreased the time of healing.

However, in 9 patients treated with primary closure (30%), pus continued to discharge, so the sutures were removed prematurely to prevent recollection[19]. This is also comparable to the result of the study [2] in which 35% of the patients had continuous pus discharge after primary closure.

In total population, the skin lesions were mostly located on the lower limbs (55%)[20], followed by upper limbs (18.3%), head and neck (13.3%), back (6.7%), chest (3.3%) and abdomen (3.3%).These results of our study are comparable to the study carried out at USA.[1] The high incidence of lesions on the limbs is due to the fact that limbs are prone to minor unnoticed injuries, interpersonal contacts and are not

well covered with clothing making insects bites easier. All these factor lead to the formation of skin abscesses as a consequence of secondary bacterial infection[21].

CONCLUSION

Surgical drainage of skin abscess is one of the most frequently performed operations in emergency and outpatient departments. Packing of abscess cavity after I&D is the conventional way of treating abscess. Keeping in view the results of our study, it is concluded that primary closure of abscess cavity after I&D is simple and safe when covered by systemic antibiotics. It has a better outcome in terms of healing as it increases the rate of healing in post-operative period. This renders decrease in visits to hospital and cost of treatment. Also, it decreases the morbidity of patient in terms of pain that is experienced at the time of pack change. Hospitals treating entitled population have the benefits of decease in burden on OPDs and expenses incurring on treatment with the application of this technique.

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