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Research Article

Excision and primary closure of sacrococcygeal pilonidal sinus using suction drain

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ABSTRACT

Background: Sacrococcygeal pilonidal sinus is a debilitating condition mostly affecting hairy males. The treatment of the condition is mainly surgical. Though various surgical methods are available but each has its own limitations like prolonged healing time and recurrence. We employed a simple technique which resulted in minimal complication rate and good results.
Methods: Between 2011 and 2014 we operated 40 patients for sacrococcygeal pilonidal sinus. Thirty eight patients were males and 2 females between ages of 18 to 45 years. Patients underwent excision of the sinus with primary closure of the wound over a suction drain. Patients were discharged next day along with drain. Drain was removed on 7th day and sutures removed on 14th day. Patients were followed for 6 months.
Results: Mean operative time was 40 minutes. One patient has accidental removal of drain in the first postoperative day which led to subsequent wound infection and prolonged healing. Rest of the patients had an uneventful postoperative course with no wound complications, nice wound healing and no recurrences over a period of 6 months.
Conclusions: The method we described is simple, less time consuming, has short hospital stay, cost-effective and has excellent results.

Keywords: Pilonidal sinus, Recurrence, Suction, Drainage

INTRODUCTION

The word "pilonidal sinus" was coined by Hodges in 1880 to describe a chronic sinus containing hair and found between the buttocks.[1] Pilonidal sinus is a chronic subcutaneous abscess in the natal cleft, which spontaneously drains through the openings.[2] It may present as an acute pilonidal abscess that might need urgent drainage. Usually the disease does not manifest until puberty and seldom occurs after the third decade of life. However, pilonidal sinus may occur at any age. The average age of patients with pilonidal sinus is 32 years in men and 24 years in women.[3]

Various treatment modalities have been advocated for pilonidal sinus, ranging from conservative to surgical but overall treatment of pilonidal sinus is frequently unsatisfactory because of its high recurrence rate. Use of phenol as sclerosing agent has been demonstrated with success in some studies. The other non-surgical methods that have been described includes use of fibrin glue, cryosurgery, and laser epilation.[4-8]

Surgical techniques include laying the track open, excision and healing with secondary intention, excision with marsupialization, excision with primary closure and techniques involving various flaps procedures.[9] Wounds left open take many weeks to heal and require daily nursing care and are a source of discomfort for the

patient. Excision and primary closure in the midline is associated with wound related complications like wound failure, haematoma formation, wound infection and the recurrence of pilonidal sinus disease. Use of drains has been described following primary closure, both for removing effluent and irrigating the wound bed.[10-12]

Since so many treatment options have been utilized, there is still no consensus on a single best procedure that can be employed. Whatever treatment is used, it should be beneficial for the patient. It should cause minimal pain, short hospital stay, healing should be good with minimal wound care, early return to routine activities, low recurrence rate and cost effective.

METHODS

Ours was a prospective study conducted on 40 patients who were admitted for the treatment of sacrococcygeal pilonidal sinus in our department from 2011 to 2014. Of these 40 patients, 38 were males and 2 were females. Patients were between 18 to 45 years of age. Mean duration of symptoms was 10 months and 3 patients had previously undergone incision and drainage of acute pilonidal abscess.

Patients were admitted one day before the elective surgery. All the routine blood investigations followed by pre-anesthetic check-up of all the patients were done and informed consent for the surgery was taken. Part preparation (trimming of hair in and around the area of interest and washing with antiseptic soap) was done in pre-operative period.

All the surgeries were done under general anesthesia. A single dose of third generation cephalosporin was given intravenously at the time of induction. Patients were kept in prone position, buttocks separated apart and povidone-iodine skin preparation was done. All the sinuses were identified visually and by using methylene blue dye (when required). An elliptical incision was made incorporating all the sinuses in it, deepened down to the sacrococcygeal fascia and specimen including skin, sinuses and sinus tracts and hair, was removed. The excised specimen was sent for histopathology.

Complete haemostasis was achieved using diathermy. Wound was generously irrigated with povidone-iodine and normal saline with constant suction. Further diathermy coagulation was then applied to small vessels which frequently rebled after irrigation and a complete haemostasis was ensured at the end. A high vacuum (Romovac®) suction drain was placed in the wound cavity and was brought out though a stab incision on the side of main wound. The skin was closed with interrupted monofilament polypropylene sutures and antiseptic dressing was applied.

Post-operatively the patients required one or two doses of intravenous NSAID or opiate analgesics after which they were switched to oral analgesics. The patients were discharged in the first post-operative day (within 24 hours), along with the suction drain. The patient and attendants were thoroughly explained about the care of the wound and particularly the drain and patients were discharged only when patients and their attendants had completely understood the way care has to be taken.

Patients were initially followed up after 1 week. The wounds were assessed and drains were removed at that time. The sutures were removed at the second follow up (on 14th day). Third follow up was done at one month and then patients were followed up monthly for 6 months.

RESULTS

The mean operative time was 40 minutes. Post-operative course was uneventful in 39 patients. In one patient there was accidental removal of drain in the first post-operative period before discharge. The wound was dressed at that time and patient was kept admitted for 4 days after which he was discharged. However patient has persistent discharge for which he needed frequent antiseptic dressings and a course of antibiotics. Despite this the wound got infected and required drainage of pus. Wound took a long time to heal with a bad scar.

Figure 1: Sacrococcygeal pilonidal sinus with two openings.

Figure 2: Delineating the tract using methylene blue.

Figure 3: Sinus tract along with openings excised.

Figure 4: Primary wound closure over suction drain.

Figure 5: Scar after 2 months.

Rest of the patients had a completely uneventful postoperative course. The drain was managed nicely and removed after 7 days. Sutures were removed after 14 days. Wounds healed by first intention leaving good scars. No recurrences were seen during 6 months of follow-up.

DISCUSSION

During Sacrococcygeal pilonidal sinus consists of one or more midline openings, which communicate with a fibrous tract lined by granulation tissue and containing hair lying loosely within the lumen. A common affliction among the military, it has been referred to as 'jeep disease'. The etiology and pathogenesis of PNS, has been a matter of controversy over the decades. At present accumulated evidence support that PNS is an acquired disease.[11] The suggested two important causes of PNS are deep natal cleft, causing buttock friction and poor personal hygiene causing accumulation of loose hair and debris in the cleft.

Although various surgical treatment methods have been described for pilonidal disease, no ideal treatment is available yet. One common thing to all the procedures is the excision of the sinus, but options for management of the wound differ widely. The treatment option used for the management of a particular wound should be employed keeping in mind certain factors like condition of the surgical wound (infected or not), wound size, surgeon expertise and previous surgical failures.

Laying the wound open or marsupialization after excision has its own problems. It requires frequent dressings that are a source of discomfort for the patients and healing time is long. Wound breakdown is another disadvantage caused by premature closure of skin edges before a complete wound healing. Excision and primary closure seems to be the simplest and straightforward procedure but has high rate of wound complications and recurrences.

Various attempts have been made to reduce or obliterate the concavity of natal cleft. Bascom hypothesized that infection starts in the hair follicles, which have open orifices that initiate the development of infection and sinus. He recommended excision of the midline pits with lateral open drainage of any associated abscess.[13] Karydakis used an asymmetric excision and primary closure to prevent hair penetration into the natal cleft.[14] With this technique, the natal cleft is flattened, and the incisional line and scar are transferred laterally from the midline. To eliminate natal cleft and wound tension, various plastic reconstructive techniques such as Z-plasty, W-plasty, V-Y plasty and various flap techniques have been used.[15] However these flap procedures are technically complex. Z and W-plasty techniques results in a midline wound and have high recurrence rates. Other flap techniques have high complication rates.[15]

Though simple excision and primary closure has a high rate of wound complications and high recurrence, attempts have been made to modify the procedure to decrease the both. Randolph S Williams reported a series of 31 patients whom he operated for sacrococcygeal pilonidal sinus.[16] These patients underwent excision and primary closure of the sinus over a suction drain. The mean operative time was 35 minutes. The results were excellent with markedly decreased rate of local wound complications and primary healing resulted in 28 patients.

Tritapepe R, Di Padova C published a series of 243 patients were treated by excision and primary closure of pilonidal sinus over a suction drain.[12] Suction was stopped on the first postoperative day and it was followed by flushing of the wound with antiseptic and saline

through the drain till day 6. The drain was removed on day 8 or 9, some of the stitches on day 8 or 9 and the rest on day 9 or 10. The surgery was performed on a day hospital basis in 207 cases; the remaining 36 were hospitalized overnight and discharged on the following day. Healing was by primary intention in all the cases and no recurrence was seen in 5-15 years of follow up.

In our series patients underwent excision and primary closure of the sinus over a suction drain. The mean operative time was 40 minutes. All but one (who had premature accidental removal of drain) patients were discharged on first postoperative day. Drain was removed on 7th day and sutures on 14th day. There were no wound complications in those patients and no recurrence over a follow up period of 6 months. The procedure was simple, required less frequent dressings and good results. The only concern that remains is the care of drain. But with proper instructions it turns out to be uneventful as we demonstrated in our series.

CONCLUSION

The success of primary closure after excision lies in prevention of haematoma formation and wound infection. This can be done by proper preoperative preparation, intraoperative antiseptic wound irrigation, haemostasis and proper post-operative wound management. The latter can be accomplished by use of a suction drain. The only concern that remains is the care of drain. But with proper instructions it turns out to be uneventful as we demonstrated in our series. The procedure is simple, less time consuming, cost-effective and has excellent results.

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