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Original Research Article

Study of clinical profile, surgical interventions and outcome in a series of patients with pilonidal disease

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ABSTRACT

Background: Pilonidal disease is a controversial benign condition that often causes nuisance and disability in young adults. Sacrococcigeal region, intergluteal natal cleft, interdigital cleft in barbers and the other hair bearing areas like axilla are found to be involved. Different authors have described different techniques of management of pilonidal disease.
Methods: During September 2010 to August 2018 total 24 patients were presented with pilonidal disease and were treated using various surgical interventions. This retrospective study is done to study demographics and clinical spectrum, clinical course, outcome of different surgical interventions done and complications associated with various techniques.
Results: Out of 24 patients 18 (75%) were males whereas 6 patients (25%) were females. The age range was 23 to 44 years. Sacrococcigeal region is the most commonly affected region in this series. In this series average duration of presence of pilonidal disease before presentation was 89 days ranging from 4 days to 168 days. One of 24 patients was treated with medical management and rest 23 patient required surgical intervention. Complete excision with rhomboid flap was the most common way of treating pilonidal disease and was used in 10 (41.6%) cases.
Conclusions: Pilonidal disease is benign condition seen in young adults associated with morbidity without any mortality. Sinus is the commonest mode of presentation and sacrococcigeal region is the commonest site affected by this disease. Rhomboid flap has a promising result in terms of less post-operative recovery time and post-operative complications.

Keywords: Pilonidal disease, Pilonidal sinus, Surgical intervention, Rhomboid flap

INTRODUCTION

Pilonidal disease is an acquired condition occurring due to invasion of hairs in the skin. It is more commonly found in students and jeep drivers, who tend to sit for prolonged hours. Sacrococcygeal region, intergluteal natal cleft and the other hair bearing areas are predominantly found to be involved. It was first reported Mayo. The pathogenesis of pilonidal disease was first described by Anderson and later named pilonidal sinus by Hodges.[1] The word pilonidal derived from the Latin words pilus ("hair") and nidus ("nest"). Although the etiology is uncertain, but most importantly pilonidal sinus is related to the implantation of loose hair into the depth of the natal cleft.[2] The risk factors for pilonidal sinus disease are white race, familial tendency, obesity, male gender, young age, excessive sweating and sedentary life style.[3] This retrospective observational study present experience of clinical presentation of pilonidal disease, types of surgical treatments done and its outcome.

Objectives

Retrospective study of all clinical records was done to study of demographics and clinical spectrum of pilonidal diseases. Records were also studied for clinical course and outcome of different surgical interventions done to treat pilonidal disease. Study was also done to look for complications associated with various techniques, its treatment and the outcome of treatment.

METHODS

This is a retrospective observational study of series of cases presented to me in private hospitals as well as D Y Patil Hospital which is a tertiary care center in Navi Mumbai. Clinical records of all patients suffering from pilonidal disease which were presented during September 2010 to August 2018 were collected. For the purpose of publication necessary approval was taken from institutional ethics committee. All patients managed were included in the study. Data collected was reviewed for demographic details, clinical course, type of intervention done and outcome of pilonidal disease. Statistical analysis was done using Microsoft Excel Office programme. No Special software was used. Review of literature related to pilonidal disease was done using Pubmed central, Medline and Google search. Our results were compared with available literature. The treatment of pilonidal disease is surgical. Variety of surgical techniques has been described in the literature. Surgical technique and type of surgical intervention was evolved with time and experience. In initial cases excision with complete or partial closure was done over a period of time complete excision with rhomboid flap is done as the standard procedure for treating pilonidal sinus in gluteal region.

Technique of complete excision and rhomboid flap for pilonidal sinus

Rhomboid flap is a rotational flap wherein full thickness of adjacent skin is mobilized to cover rhomboid shaped defect. Steps involved in surgery are as shown in the Figure 1.

Figure 1: Steps involved in rhomboid flap surgery; (A): Drawing rhomboid around the pilonidal sinus; (B): Marking one site of rhomboid; (C): Marking or area for creating rotational flap; (D): Excision of sinus along with rhomboid; (E): Creating rotational flap; (F): Approximation and closure of wound.

Drawing of rhomboid around the sinus is most important aspect, as shown in (Figure 1A) drawing of rhomboid is based on the length of the sinus tract. Then one of the site of rhomboid is marked as A-B. The point opposite to A is marked as A1 and then marking of B1 is done based on length between A and B. Once marking is done field is infiltrated with diluted solution of saline, adrenaline and hyluronidase. Adrenaline caused vasoconstriction and less bleeding whereas with hyluronidase there is decrease in postoperative flap congestion and induration. Usually sharp dissection is done to remove rhomboid along with sinus. Mobilization of full thickness skin flap can be done starting from A1 to B1 and then parallel line downwards from B1. Once flap mobilization is complete, stay sutures are taken to approximate A with A1 and B with B1. To prevent collection of fluid negative pressure suction drain

is used; finally the tension free approximation of flap is done by taking multiple stitches. In post-operative period to prevent flap movement patient is asked to stay in lateral or prone position. Drain removal was done after 48 hours and stitch removal was usually done on 10th post-operative day.

Peri-operative care

All patients, except patients with acute abscess, were treated with course of antibiotics based on sensitivity pattern prior to considering for surgical treatment. In patients presented with acute abscess emergency incision and drainage was done. Magnetic resonance imaging or X-ray sinogram was done based on affordability of the patient. In post-operative period combination of amoxicillin with clavulanic acid was given in injectable form for three days. Subsequently antibiotics were given as per sensitivity pattern.

All clinical record were analysed for clinical course, nature of surgical intervention, duration required for healing and complications in postoperative period.

RESULTS

Total 24 patients presented and treated during eight years' time. All patients were included in the study. Out of 24 patients 18 (75%) were males whereas 6 patients (25%) were females. The average age of male and female patients was 32 years and 27 years respectively. Overall age range was 23 to 44 years. Region affected by pilonidal disease and its presentation was as shown in Figure 2 and 3 respectively.

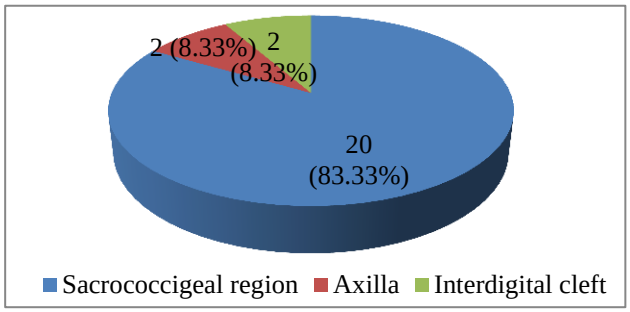

Figure 2: Regions affected by pilonidal disease.

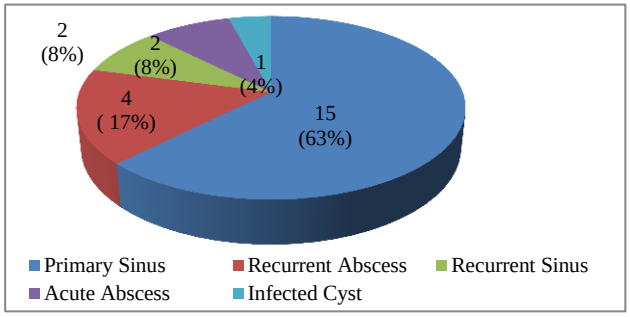

Figure 3: Presentation of pilonidal disease.

Sacrococcigeal region is the most commonly affected region in this series. 20 (83%) patient had pilonidal disease in sacrococcigeal region. Out of these 20 patients, 2 patients were presented with acute abscess.

Figure 4: Acute pilonidal abscess in sacrococcigeal region.

4 patients presented with recurrent abscess, 12 patients presented with primary pilonidal sinus whereas 2 patients had recurrence of pilonidal sinus after doing primary excision at some other hospital. Two male barbers presented with discharging sinus in interdigital cleft had pilonidal disease.

Figure 5: Pilonidal sinus in interdigital cleft.

Both of them presented with small discharging sinus in interdigital cleft and found to have hairs at the base of sinus which was not allowing it to heal. One female patient presented with an infected cystic swelling in axilla which turned out to be pilonidal cyst after spontaneous rupture during medical management of infection. In this series average duration of presence of pilonidal disease before presentation was 89 days ranging from 4 days to 168 days. One of 24 patient who had infected cystic swelling in the axilla was treated with medical management and during course it was ruptured with discharge of pus and hairs; cyst wall was removed by curetting and it was healed without any intervention. Rest 23 patient required surgical intervention. Various surgical options used for treatment are as shown in the Table 1.

Table 1: Different surgical techniques used, average duration of treatment with each technique and associated complications.

Treatment	No. of cases	Average treatment duration (days)	Complications			
			Recurrent abscess	Recurrent sinus	Minor SSI	Major SSI
Medical treatment	1	30				
Incision and drainage	4	32	1			
Excision	4	54				
Excision with partial closure	2	45	1			
Excision with primary closure	3	40		2		
Excision with rhomboid flap	10	10			1	1

Complete excision with rhomboid flap was the most common way of treating pilonidal disease and was used in 10 (41.6%) cases. With intension to reduce post-operative healing period, excision with partial or complete closure was in done in total 5 (20.8%) cases where as in 4 (16.6%) patients after excision wound was allowed to heal with secondary intension. Duration of healing was least in patient who underwent rhomboid flap and it was maximum in patient where wound was allowed to heal with secondary intension after doing complete excision. One patient who underwent incision and drainage of pilonidal abscess developed recurrent abscess, one patient with partial primary closure also developed recurrent abscess; both of them were treated with antibiotics as per sensitivity. Recurrent sinus after complete primary closure was seen in 2 out of 3 cases and hence subsequently this technique was discontinued. Rhomboid flap was associated with minor surgical site infection (SSI) in one patient which was managed with regular dressings and antibiotics but one patient developed major SSI and required vacuum assisted closure for its treatment.

DISCUSSION

Pilonidal disease is a benign condition that often causes nuisance and disability in young adults.[4] It is one of the controversial disease as there is no consensus on its etiopathology, treatment, associate high recurrence rate, long treatment duration and cost involved in its treatment. Pilonidal disease involves loose hairs, skin and flora. Risk factors for pilonidal disease include male gender, hirsute individuals, Caucasians, sitting occupations, existence of a deep natal cleft, and presence of hair within the natal cleft. Local trauma is another predisposing factor. Etiology of pilionidal disease is controversial, various theories have been established since it was first described, no consensus has been reached.[5]

According to the supporters of congenital theory, pilonidal sinus disease occurs because of residual epi-thelium in the spinal canal and skin or when hair follicles enter to interspace formed by incomplete fusion occurring as a result of a defective union of the skin layer during the early embryonic period. According to the supporters of acquired theory, pilonidal disease occurs as a result of inflammation that results from foreign body reaction occurring secondary to the entry of hairs in the subdermal area after trauma. Supporters of this theory also suggest various other theories to explain the occurrence of this mechanism. The etiology of pilonidal disease as a foreign body reaction is supported by histological examination. It demonstrates foreign body giant cells associated with hair shafts that are embedded in chronic granulation tissue lining the abscess cavity and sinus tracts.

Although, Sacrococcigeal region is the most common region for pilonidal sinus, the condition rarely affects other areas like axilla, neck, umbilical region and interdigital clefts.[4,6,7] In this series, Pilonidal disease of sacrococcigeal region is commonest, along with it, one patient had pilonidal disease involving axilla and two patients had a disease in interdigital cleft.

Different types of clinical presentations of pilonidal disease have been described in the published literature. In asymptomatic form, patients have no complaints and are incidentally diagnosed. In this form, one or more pits are located at the midline about 5 cm from anus. In a study by Eftaiha et al, the ratio of these patients among all patients with pilonidal sinus was found to be 11%.[8]

Formation of acute abscess in areas of high prevalence like sacrococcigeal region is one of the ways of presentation of pilonidal disease. Sometimes instead of abscess there is formation of cystic swelling which later on get infected to form abscess. In our series 4 patients (16.6%) presented with abscess and one patient had axillary cystic swelling which later on got infected to form pilonidal abscess. In chronic disease form, patients usually present with a discharging sinus. Quantity of discharge varies from individual to individual and usually associated with different degree of infection.

There are lot of controversies related to the treatment of pilonidal disease. From the time of its description, a variety of surgical procedures have been proposed for this

condition. They include incision and drainage, cryosurgery, excision with open packing, excision with primary closure, flap surgeries, etc.[4,6,7,9-12] Conservative management has limited role for the management of pilonidal disease it can be considered in early stages of disease. In this study only one patient with axillary sinus was managed with antibiotics and regular dressings. Most of the patients with pilonidal disease require surgical treatment. Although different surgical options have been described in the literature, lot of controversy still exists regarding the best surgical technique. Flap surgeries have shown promising results. Karydakis et al flap procedure are the 2 most popular flap surgeries describe. The basic aim of these surgeries is that it not only eradicates the sinus and the cervices in which the hair gets accumulated, but the surgery also eliminates the factors responsible for these sinuses.[9,13,14]

The main problem with pilonidal sinus surgeries is complications and recurrences. The reported rate of complications ranges from 8 to 16%.[15] The complications include SSI, hematoma and flap necrosis. In present study, total 6 patients developed complications. Two patients with rhomboid flap developed SSIs of which one patient required vacuum assisted closure device for its treatment. Adequate preoperative antibiotic treatment may help to avoid such SSI.

Nothing has been reported about long-term preventive measures for prevention of recurrence of pilonidal disease. In this study, as published earlier, use of modified surgical gloves has been used for prevention of recurrence in interdigital web space pilonidal sinus in barbers.[16] Further for patients having pilonidal disease in sacrococcigeal region, after completion of treatment, patients were asked to remove hairs on the back for at least for 6 months and take all hygienic measures like proper cleaning of intergluteal cleft during bath, use of talcum powder to keep area dry to prevent recurrence of pilonidal disease. Although these measures useful, proper study is required to analyze effectiveness of such measures to prevent recurrence.

CONCLUSION

Pilonidal disease is a common, benign clinical condition seen in young adults associated with morbidity without any mortality. Although seen in variety of forms, sinus is the commonest mode of presentation and sacrococcigeal region is the commonest site affected by this disease. Rhomboid flap has a promising result in terms of less post-operative recovery time and post-operative complications. Further studies are required to study role of various measures to prevent of recurrence of disease after successful treatment.

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