Albanian Journal of Trauma and Emergency Surgery (2023) 7/1: 1196-1199
DOI: 10.32391/ajtes.v7i1.324

REVIEW ARTICLES

Surgical Treatment of uncomplicated Pilonidal Sinus with the simple Closed Technique.

Enton Bollano[1,2*], Krenar Lilaj[1,2], Dariel Thereska[1,2]

Received: 19 December 2022 / *Accepted:* 06 January 2022 / *Published online:* 20 January 2023
This article is published with open access at ***https://journal.astes.org.al***

Abstract

Introduction; The pilonidal sinus represents a benign cystic formation located between the skin and the coccygeal bone in the mediogluteal line. It was first described in 1833 by Herbert Mayo and R.M Hodges.

It is thought that the cause is the penetration of hair into the subcutaneous intergluteal area. This pathology is the result of an inflammatory expansion of the hair follicle accompanied by the expansion of the fatty glands and sweat.

The purpose of the study: To evaluate our results in the treatment of this pathology with the technique above and to compare them with the results of similar works referred to in the world literature.

Materials and Method; *In* our study are recorded 60 patients, diagnosed with uncomplicated and previously unoperated sacrococcygeal fistula were included in the study. Divided by sex, 43 men and 17 women. The average age of our patients was 29.5 years (18-41 years). The time period of the study extends from January 2015 - March 2019…

Results; All patients suffered from the chronic phase of pilonidal disease. The intervention was carried out with the help of spinal anesthesia by injecting 2 ml of 2% sol lidocaine in the L 3-L4 space. During the intervention, two grams of intravenous cephalosporin are applied. Interventions are performed by placing the patient in a ventral position with leucoplasts gluteal diversion.

Conclusion; The presence of hair inside the pilonidal sinus is a reason in favor of the acquired theory regarding the pathogenesis. In our study, only one patient referred to heredity related to pathology. The duration of the intervention depends on the skills of the surgeon and the difficulty of the pathology. The hospitalization was determined by postoperative complications.

Keywords: pilonidal sinus, simple closure, simple Closed Technique

Introduction

The pilonidal sinus represents a benign cystic formation located between the skin and the coccygeal bone in the mediogluteal line. It was first described in 1833 by Herbert Mayo and R.M Hodges in 1880 named it like above. [2. 4]. Inside the cyst, there is hair, liquid with impure content, granulation tissue, and pus in cases of abscesses. The pilonidal sinus presents its clinic when the infection overlaps. It represents a chronic inflammatory pathology most frequent in the sacrococcygeal region, therefore it is known as pilonidal disease. French proctologists use the term sacrococcygeal fistula based on its three constituent elements: external buttons, fistulous tract, and pits. It is thought that the cause is the penetration of hair into the subcutaneous intergluteal area. This pathology is the result of an inflammatory expansion of the hair follicle accompanied by the expansion of the fatty glands and sweat. These structures lie under the skin in the sacrococcygeal and intergluteal regions from where the cranial or caudal trajectories originate.

Original article, no submission or publication in advance or in parallel

* ***Corresponding author:***
Asc. Prof. Enton Bollano MD, PhD
✉ *entonalbania@yahoo.com*

1 The General Surgery Service, University Hospital Centre "Mother Theresa", Tirana, ALBANIA
2 Department of Surgery, Faculty of Medicine, University of Medicine, Tirana, ALBANIA

These trajectories open to the right or left of the mediogluteal line and are known as external fistulous buttons [2, 3, 9].

There are three factors according to Karydakis that play an important role in the pathogenesis of the disease: (i) the invasive ability of the hair; (ii) its strong insertion into the skin and; (iii) the fragility of the skin in that area [5, 16, 18].

The onset of the symptoms is caused by local trauma followed by inflammation. It affects more often young ages, individuals whose skin has a lot of hair, and young people after puberty, where it is thought that sex hormones have their influence on the appearance of the pathology. In the ages after 40 years, it is rarely found.

Men are 3 times more likely to be diagnosed with a pilonidal cyst than women.

Pain, purulent secretions, hair coming out of the fistulous lesion, and local dermatitis are the main symptoms of the pathology.

Surgical treatment is the only treatment for this pathology. The techniques are divided into three groups: open, semi-closed, and closed.

The closed techniques most referred to in the literature are fistulectomy with the immediate closure of the wound (simple plastic), Karydakis flap, Limberg flap, type "Z" plastic, and Bascom plastic. In our study, we used simple plastic [7, 9, 10].

The purpose of the study: To evaluate our results in the treatment of this pathology with the technique above and to compare them with the results of similar works referred to in the world literature.

Materials and Methods

In our study are recorded 60 patients, with uncomplicated and previously unoperated sacrococcygeal fistula were included in the study. Divided by sex, 43 men and 17 women. The average age of our patients was 29.5 years (18-41 years). The time period of the study extends from January 2015 - March 2019.

Results

All patients suffered from the chronic phase of pilonidal disease. The intervention was carried out with the help of spinal anesthesia by injecting 2 ml of 2% sol lidocaine in the L 3-L 4 space.

During the intervention, two grams of intravenous cephalosporin are applied. Interventions are performed by placing the patient in a ventral position with leucoplasts gluteal diversion. One day before the intervention, a trichotomy of the area and a local toilet with betadine solution are performed.

Technically, the intervention is performed by injecting methylene blue solution from the external button in order to identify the fistulous tract. Then a symmetrical ellipsoid incision is made, including the entire fistulous tract.

The excision is made to the depth, taking care to preserve the presacral fascia as well as from the thermal effect of the electroscope. Careful hemostasis is done and the toilet of the cavity with physiological solution 0.9% and then Flagyl solution [13].

In the end, the wound is closed with three layers. Two separate 2-0 vicryl layers for the subcutaneous part and one 2-0 prolene layer for the skin.

The sutures were placed at a distance of 1.5 cm from each other.

The first layer touches the presacral fascia while the second layer touches the subcutaneous tissue, eliminating the spaces dead. In the end, a gauze tampon is placed on the wound with special thick prolene sutures with a large edge. These sutures reduce the tension on the plastic sutures as a result of the width of the skin and the subcutaneous tissue that circulate simultaneously, [11, 17, 20].

Patients left the hospital when the complications were cured. A 24-hour hospitalization was mandatory for everyone. Postoperative follow-up consists of removing the tampon on the third day and removing the skin sutures on the seventh day.

If patients were in pain, we recommended paracetamol 500 mg per os, the application of betadine locally, and a porridge diet plus liquids for ten days.

The follow-up of the patients lasted up to 3 months after the intervention. In the first month, the follow-up was carried out every ten days, then every month. When the patients expressed concerns, they were presented outside the established rule [1,12,14].

During the study, the following were evaluated: the length of the operative wound (Tab.1); the depth of the operative wound (Tab.2); quick, close, and distant complications (Tab.3); the method of epithelization of the operative wound (Tab.4); the average duration of the intervention; average hospital stay; the duration of the closure of the operative wound; inflammation of the operative wound; the presence of hair inside the pilonidal sinus; family predisposition; the number of relapse cases.

The length of the operative wound (cm)	0-5 cm	0-10 cm	Over 10 cm
Number of patients	35	19	6

Table 1- The length of the operative wound

The depth of the operative wound	Deep	Shallow
Number of patients	9	51

Table 2 - The depth of the operative wound

Postoperative complications	Quick (during hospitalization)	Close (after discharge from the hospital until the 30th day)	Distant (after the 30th day)
Number of patients	2	4	2

Table 3- Postoperative complications

Epithelization of the operative wound	First epithelization	Second epithelization
Number of patients	54	6

Table 4 - Epithelization of the operative wound

The average duration of the interview was 49.3 minutes; The average duration of hospitalization was 33.5 hours; The average duration of the closure of the operative wound was 48.2 days; In all patients, the presence of hair in the pilonidal sinus was noticed during the intervention; Only one of the patients referred to family inheritance; Only one case was identified as a relapse

Discussion

Many closed techniques are referred to for the treatment of pilonidal disease. But what is the best surgical technique that should be proposed to patients?

We think that the best technique is the one that meets the following criteria: low number of complications, short hospital stays, fast recovery, low recurrence, good quality of postoperative life, and good aesthetic effect.

Even though many techniques have been described in the last 10 years, simple plastic surgery with its own modifications has a very important place among them [15, 19].

From our study outcomes, 8 complications were identified, 2 of which were during hospitalization. Both cases had a small superficial subcutaneous hematoma and were treated by draining the hematoma and re-stitching the wound.

There were quick complications in 4 patients. Two patients had an angled opening, below and above the wound (11th and 14th day).

Turbid serohemorrhagic secretions were noticed inside the open wounds. The third patient presented with an infection at the bottom of the operative wound (day 10). The fourth patient presented with a seroma of the operative wound which was also drained and the wound was left open (day 13).

Their wounds were subsequently treated as open wounds and the closure of the wound was done in a second stage.

Two patients presented with distant complications. The first patient with visible relapses (day 31) and the second one with the lower corner of the wound not closed (day 33).

The eighth patient with complications belonged to the group with long and deep wounds. The patient with relapses was treated with the phytolithotomy technique and the wound was treated daily until its closure.

The patient with an open wound was treated by curing the wound until epithelization. Complications and recurrence belonged to the group of patients with long and deep wounds or with large wounds. This was a consequence of the high tension on the approaching sutures, the high possibility of leaving "dead" spaces, and increased serohemorrhagic secretions inside the operated wound [6, 8, 15].

Patients with shallow and small wounds had no complications or relapses. This data let us understand that the technique is more suitable for wounds that are not large or need more perfection during their execution [12].

Epithelization of the wound in the first moment was observed in 54 patients against 6 patients where epithelization was done in the second moment. This means that 54 patients were able to work faster, had a better quality of life, and had the smallest signs of the wound. The treatment of the complicated wound of 6 patients leads not only to delays in their rehabilitation for work, and more visible signs of post-epithelialization of the wound but also to high costs of treatment.

Delayed epithelization of the wound with an average result of 48.2 days was noticed in only 6 patients.

The presence of hair inside the pilonidal sinus is a reason in favor of the acquired theory regarding pathogenesis. In our study, only one patient referred to heredity related to pathology.

The duration of the intervention depends on the skills of the surgeon and the difficulty of the pathology. The hospitalization was determined by postoperative complications.

Conclusion

The presence of hair inside the pilonidal sinus is a reason in favor of the acquired theory regarding the pathogenesis. In our study, only one patient referred to heredity related to pathology. The duration of the intervention depends on the skills of the surgeon and the difficulty of the pathology. The hospitalization was determined by postoperative complications.

COI Statement: This paper has not been submitted in parallel. It has not been presented fully or partially at a meeting or podium or congress. It has not been published nor submitted for consideration beforehand.

This research received no specific grant from any funding agency in the public, commercial, or non-profit sectors. There are no relevant or minor financial relationships from authors, their relatives or next of kin with external companies.

Disclosure: The authors declared no conflict of interest. No funding was received for this study.

References

1. Guyatt G, Gutermen D, Baumann MH, et al. Grading strength of recommendations and quality of evidence in clinical guidelines: report from an American College of Chest Physicians Task Force. Chest. 2006;129:174–181.
2. Sondenaa K, Andersen E, Nesvik I, Soreide JA. Patient characteristics and symptoms in chronic pilonidal sinus disease. Int J Colorectal Dis. 1995;10:39–42.
3. Mayo OH. Observations on injuries and diseases of the rectum. London: Burgess and Hill; 1833:45–46.
4. Hodges RM. Pilonidal sinus. Boston Med Surg J. 1880; 103: 485–486.
5. Karydakis GE. Easy and successful treatment of pilonidal sinus after explanation of its causative process. Aust N Z J Surg. 1992;62:385–389.
6. Patey DH, Scarff RW. Pathology of postanal pilonidal sinus; its bearing on treatment. Lancet. 1946;2:484–486.
7. Hull TL, Wu J. Pilonidal disease. Surg Clin North Am. 2002;82:1169–1185.
8. Nelson J, Billingham R. Pilonidal disease and hidradenitis suppurativa. In: The ASCRS Textbook of Colon and Rectal Surgery. New York: Springer; 2007:228–235.
9. Chinn BT. Outpatient management of pilonidal disease. Semin Colon Rectal Surg. 2003;14:166–172.
10. Armstrong JH, Barcia PJ. Pilonidal sinus disease: the conservative approach. Arch Surg. 1994;129:914–917.
11. Solla JA, Rothenberger DA. Chronic pilonidal disease: an assessment of 150 cases. Dis Colon Rectum. 1990;33:758–761.
12. Al-Naami MY. Outpatient pilonidal sinotomy complemented with good wound and surrounding skin care. Saudi Med J. 2005;26:285–288.
13. Odili J, Gault D. Laser depilation of the natal cleft: an aid to healing the pilonidal sinus. Ann R Coll Surg Engl. 2002;84:29–32.
14. Schulze SM, Patel N, Hertzog D, Fares LG 2nd. Treatment of pilonidal disease with laser epilation. Am Surg. 2006;72:534–537.
1. 15.Hameed KK. Outcome of surgery for chronic natal cleft pilonidal sinus: a randomized trial of open compared with closed technique. Med Forum Monthly. 2001;12:20–23.
15. Füzün M, Bakir H, Soylu M, TansuğT, Kaymak E, Haŕmancioğlu O. Which technique for treatment of pilonidal sinus–open or closed? Dis Colon Rectum. 1994;37:1148–1150.
16. Sondenaa K, Nesvik I, Andersen E, Soreide JA. Recurrent pilonidal sinus after excision with closed or open treatment: final result of a randomised trial. Eur J Surg. 1996;162:237–240.
17. Sondenaa K, Andersen E, Soreide JA. Morbidity and short term results in a randomised trial of open compared with closed treatment of chronic pilonidal sinus. Eur J Surg. 1992;158:351–355.
18. Al-Khamis A, McCallum I, King BM, Bruce J. Healing by primary versus secondary intention after surgical treatment for pilonidal sinus. Cochrane Database Syst Rev. 2010;(1):CD006213.
19. Fazeli MS, Adel MG, Lebaschi AH. Comparison of outcomes in Z-plasty and delayed healing by secondary intention of the wound after excision of the sacral pilonidal sinus: results of a randomized, clinical trial. Dis Colon Rectum. 2006;49:1831–1836.
20. Mohamed HA, Kadry I, Adly S. Comparison between three therapeutic modalities for non-complicated pilonidal sinus disease. Surgeon. 2005;3:73–77.
21. Miocinović M, Horzić M, Bunoza D. The treatment of pilonidal disease of the sacrococcygeal region by the method of limited excision and open wound healing. Acta Med Croatica. 2000;54:27–31.
22. Gencosmanoglu R, Inceoglu R. Modified lay-open (incision, curettage, partial lateral wall excision and marsupialization) versus total excision with primary closure in the treatment of chronic sacrococcygeal pilonidal sinus: a prospective, randomized clinical trial with a complete two-year follow-up. Int J Colorectal Dis. 2005;20:415–422.
23. Al-Hassan HK, Francis IM, Neglén P. Primary closure or secondary granulation after excision of pilonidal sinus? Acta Chir Scand. 1990;156:695–699.
24. Testini M, Piccinni G, Miniello S, et al. Treatment of chronic pilonidal sinus with local anaesthesia: a randomized trial Diseases of the Colon & Rectum Volume 56: 9 (2013) 1027 of closed compared with open technique. Colorectal Dis. 2001;3:427–430.
25. Spivak H, Brooks VL, Nussbaum M, Friedman I. Treatment of chronic pilonidal disease. Dis Colon Rectum. 1996;39:1136–1139