

Pediatric Endoscopic Pilonidal Sinus Treatment: A case report

Leganés Villanueva Carlos^{1*}; Bianchi Federica¹; Brun Lozano Nuria¹; Goruppi Ilaria¹; Boronat Guerrero Susana²

¹Pediatric Surgery Unit, Department of Pediatrics, Hospital de la Santa Creu i Sant Pau. Universitat Autònoma de Barcelona, Spain.

²Department of Pediatrics, Hospital de la Santa Creu i Sant Pau, Universitat Autònoma de Barcelona, Spain.

Received Date : Nov 19, 2021
Accepted Date : Feb 01, 2022
Published Date : Feb 11, 2022
Archived : www.jcmimagescasereports.org
Copyright : © Leganés Villanueva Carlos 2022

***Corresponding Author:** Leganés Villanueva Carlos, Pediatric Surgery Unit, Department of Pediatrics, Hospital de la Santa Creu i Sant Pau, Barcelona, Carrer de Sant Quintí, 89, 08041 Barcelona, Spain. 932 91 90 00. Email: cleganes@santpau.cat

Abstract

Introduction: Pilonidal sinus is an extremely common disease in adolescents and young people; the report aims to present a new minimal invasive technique for the treatment of the pilonidal sinus.

Case presentation: A 14-year-old female presented in the emergency department with a pilonidal sinus discharging lesion for a 6-month duration. There was a local redness with multiple fistulas discharging purulent content. The lesion was drained and after 3 months the patient was referred to the operation room for the lesion excision using the Pediatric Endoscopic Pilonidal Sinus Treatment under sedation. After 2 months of follow up the patient remains asymptomatic.

Conclusion: Pilonidal sinus is a common disease in adolescents and young people. Pediatric Endoscopic Pilonidal Sinus Treatment seems to be an effective treatment strategy with cosmetic results and painless postoperative period.

Introduction

Pilonidal sinus disease (PSD) is a tract or cavity of the sacrococcygeal region due to repeated infection and chronic inflammation. The incidence of PSD has been increased during the last years, particularly in European and North American young men [1]. PSD affects adolescents, young people and mostly male gender. There are some risk factors described in the literature such as are poor hygiene, hirsutism, local trauma, obesity, family history and unhealthy behavior such as prolonged sitting. The main predisposing factor is the presence of hair at the intergluteal cleft [2]. Symptoms are variable, from asymptomatic pits to acute abscess or chronic cyst. There is no a gold standard treatment for the PSD and various surgical operative management options are available; some open surgical techniques are known as secondary intention healing after en-bloc excision, en bloc resection and primary closure on the midline, Karydakias flap or Limberg flap [3]. A minimal invasive technique was reported for PSD in adults for the first time in 2014 and in pediatric patients in 2018 [4]. We present a case of a Pediatric Endoscopic Pilonidal Sinus Treatment (PEPSIT) in a 14-year-old patient with PSD.

Case report

1. Patient information

A 14-year-old Caucasian female presented in the emergency

department with a discharging pilonidal sinus for 6 months. Past and family histories were clear. Pilonidal sinuses with purulent contents were drained. The patient was referred home with oral antibiotics and iodine wound care for one week. After 3 months the patient was operated with minimal invasive surgery using PEPSIT technique.

2. Therapeutic intervention: Pediatric Endoscopic Pilonidal Sinus Treatment (PEPSIT)

After preparation of spinal anaesthesia and antibiotic prophylaxis, the patient was placed in prone position with external traction of both glutei. Surgeon's position was at the patient's right side. Two screens were placed, one at patient's feet and one at patient's head, according to the lower or upper extension of the fistula. On examination, a smooth round mobile subcutaneous swelling was felt at the distal shaft of the sacrococcygeal region with 5 skin pits. The procedure started by dilating the lower pit using urethral dilators and the entire tract was enlarged using saline with the fistuloscope.

(Figure 1) The fistuloscope diameter was 3.2 × 4.8 mm, and its operative length is 18 cm. It's important to identify the complete anatomy of pilonidal sinus, lateral tracts, secondary cavities or abscess cavities using the continuous jet of irrigation solution. The remaining hair and bulbs were removed under vision using endoscopic grasping forceps. Finally, we proceed to debride the sinus tracts and granulation tissue with endo-

Citation: Leganés Villanueva Carlos, Bianchi Federica, Brun Lozano Nuria, Goruppi Ilaria, Boronat Guerrero Susana. Pediatric Endoscopic Pilonidal Sinus Treatment: A case report. J Clin Med Img Case Rep. 2022; 2(1): 1083.

brush and cautery ablation with bipolar electrode of the sinus and the fistulous tracts.



Figure 1: Enlargement of an external pit opening using urethral dilators.

et al. Pediatric Endoscopic Pilonidal sinus treatment a revolutionary technique to adopt in children with pilonidal sinus



Figure 2: Cautery ablation with bipolar electrode of the sinus.

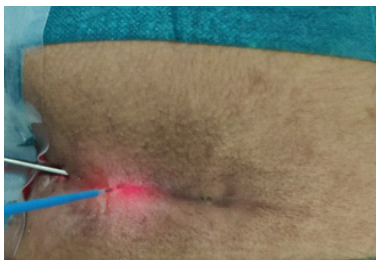


Figure 3: Cautery ablation with monopolar electrode of the skin pits.

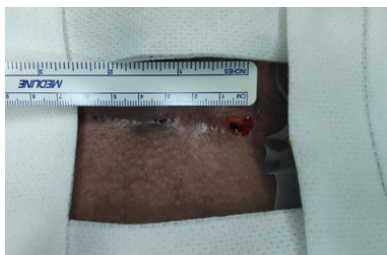


Figure 4: Final result of the after the operative PEPSiT procedure.

(Figure 2 - 4) The length of surgery was 35 minutes. No intra-operative or postoperative complications were reported.

3. Follow-up and outcomes

The patient was discharged home 3 hours after surgery and went to school the first postoperative day. The patient required painkillers only during the operation day and daily wound care applying iodinated povidone the following two weeks. After two months, the scar was healthy and there was no sign of recurrence.

Discussion

Pilonidal sinus disease (PSD) is considered an acquired disease due to the obstruction of hair follicles in the natal cleft. PDS is

marked by the existence of tracts or cavities of the sacrococcygeal region due to repeated infection and chronic inflammation. Minimally invasive treatments in PSD has the purpose to minimise morbidity and improve healing rates with good aesthetic results [1, 5]. Our case report shows that Pediatric Endoscopic Pilonidal Sinus Treatment (PEPSiT) could be an effective technique with a short and painless postoperative period versus open surgery.

Open surgery with secondary intention healing after en-bloc excision, en bloc resection and primary closure is used in the treatment of PSD, but those techniques offers a poor postoperative quality of life, longer hospital stay, more acute postoperative pain, needs frequent clinical observation and daily wound care for several weeks [6]. The patient reported in this study was discharge after 3 hours postoperative and were encouraged to mobilize immediately with early return to daily activities. She didn't require admission of an overnight stay or emergency room readmission after the discharge and only required analgesic during the first postoperative day.

The success rates reported in the literature of adult patients treated with are Endoscopic Pilonidal Sinus Treatment are 95% [7]. On the other hand, the open surgical approach has a recurrent PDS rate of 25-30% of cases [8]. In pediatric patients the PEPSiT has a low recurrence rate (4.6%); some authors consider the PEPSiT the standard of surgical treatment of PSD in children and teenagers because is technically easy, with short and painless post-operative period and low recurrences [9]. In case of recurrent PSD, PEPSiT has also been described as an effective technique after failed open repair [10].

Finally, recent studies shown protocols for PDS in pediatric patients with a success rate over 98% consisting of pre-operative laser epilation (LE), PEPSiT, and post-operative wound management with oxygen-enriched oil-based gel dressing and LE [11,12].

Conclusion

Pilonidal sinus is a common disease in adolescents and young people. As we referred in this case report, the PEPSiT technique for the treatment of the PSD seems to be uneventful procedure, with good aesthetic results and a low recurrences rate.

References

1. V. K. Stauffer, M. M. Luedi, P. Kauf, M. Schmid, M. Diekmann, K. Wieferich, et al. Common surgical procedures in pilonidal sinus disease: A meta-analysis, merged data analysis, and comprehensive study on recurrence. *Sci Rep.* 2018;8:3058.
2. S Pérez-Bertólez, O Martín-Solé, I Moraleda, M Cuesta, C Massaguer, P Palazón, et al. Advantages of endoscopic pilonidal sinus treatment. *Cir Pediatr.* 2021 Oct 1;34(4):191-199.
3. Siwei Bi, Kaibo Sun, Shanshan Chen, Jun Gu. Surgical procedures in the pilonidal sinus disease: a systematic review and network meta-analysis. *Sci Rep.* 2020;10:13720.
4. Esposito C, Izzo S, Turrà F, Cerulo M, Severino G, Settini A,

fistulas our preliminary experience. *J Laparoendosc Adv Surg Tech A*. 2018;28:359-63.

5. Kalaiselvan R, Bathla S, Allen W, Liyanage A, Rajaganeshan R. Minimally invasive techniques in the management of pilonidal disease. *Int J Colorectal Dis*. 2019 Apr;34(4):561-568.

6. Giarratano G, Toscana C, Shalaby M, Buonomo O, Petrella G, Sileri P Endoscopic Pilonidal Sinus Treatment: Long-Term Results of a Prospective Series. *JLS*. 2017 Jul-Sep;21(3):e2017.00043.

7. Meinero P, Mori L, Gasloli G. Endoscopic pilonidal sinus treatment (E.P. Si.T.). *Tech Coloproctol*. 2014;18:389-392.

8. Meinero P, La Torre M, Lisi G, Stazi A, Carbone A, Regusci L, Fasolini F. Endoscopic pilonidal sinus treatment (EPSiT) in recurrent pilonidal disease: a prospective international multicenter study. *Int J Colorectal Dis*. 2019 Apr;34(4):741-746.

9. Esposito C, Montaruli E, Autorino G, Mendoza-Sagaon M, Escolino M. Pediatric endoscopic pilonidal sinus treatment (PEPSiT): what we learned after a 3-year experience in the pediatric population. *Updates Surg*. 2021 May 22.

10. Esposito C, Gargiulo F, Izzo S, Cerulo M, Del Conte F, Severino G, Escolino M. Pediatric Endoscopic Pilonidal Sinus Treatment: An Effective Procedure for Children with Recurrent Pilonidal Sinus Disease After Failed Open Surgery. *J Laparoendosc Adv Surg Tech A*. 2019 Jul;29(7):981-986.

11. Esposito C, Mendoza-Sagaon M, Del Conte F, Cerulo M, Coppola V, Esposito G, et al. Pediatric Endoscopic Pilonidal Sinus Treatment (PEPSiT) in Children With Pilonidal Sinus Disease: Tips and Tricks and New Structurated Protocol. *Front Pediatr*. 2020 Jun 24;8:345.

12. Esposito C, Turrà F, Cerulo M, Del Conte F, Esposito G, Prato AP, Escolino M. Technical standardization of MIS management of children with pilonidal sinus disease using pediatric endoscopic pilonidal sinus treatment (PEPSiT) and laser epilation. *J Pediatr Surg*. 2020 Apr;55(4):761-766.