

## CASE REPORT

# Non-operative therapy for pilonidal sinus in adolescence: crystallised phenol application, 'report of a case'

Kamil Gulpinar, Arzu Pampal, S Erpulat Ozis, M Ayhan Kuzu

Department of General Surgery, Ufuk University Faculty of Medicine, Ankara, Turkey

**Correspondence to**  
Dr Kamil Gulpinar,  
kamilgulpinar@gmail.com

**SUMMARY**

Pilonidal sinus (PS) is an acquired disease at the sacrococcygeal region that can be treated by different surgical techniques. Crystallised phenol application seems to be an alternative therapy to surgery with higher success rates, lower costs, faster recovery and earlier return to work. We aimed to state the success of phenol application for PS in adolescence. A 14-year-old boy with recurrent PS, an 18-year-old girl with the history of pilonidal abscess and a 15-year-old girl with PS was hospitalised. All patients underwent phenol application in an outpatient setting. The patients were followed thereafter. The 14-year-old boy and 18-year-old girl did not face any problems and all sinuses healed completely. The 15-year-old girl was followed for 2 weeks because of intergluteal maceration and ongoing drainage. She underwent another phenol application and the course after intervention was uneventful with complete healing of the sinus. Crystallised phenol application seems to be a promising non-operative therapy for PS in adolescents.

**BACKGROUND**

Pilonidal sinus (PS) results either from the obstructed and enlarged hair follicles in the buttock cleft or from the insertion of broken hair into the skin at the buttock cleft. The Cochrane systematic reviews which were updated at 2011 estimate the prevalence of the disease at about 26/100 000 for all ages.<sup>1</sup> Even though early 20s are the ages of clinical presentation for either gender, the adolescent population also faces this problem with tremendous morbidity. Several surgical techniques are described in order to treat the disease. All of these techniques are associated with different healing times, success rates and costs. As none of these surgical techniques is accepted as ideal therapy, the clinicians are still endeavoring to idealise therapy.

Phenol injection was first described in 1964 as a conservative method to treat PS.<sup>2</sup> The method is based on removal of debris and hair, destruction of abnormal epithelial lining of the sinus and sterilisation of the infected contents with phenol. For the last decade, this forgotten treatment option has been popularised and now it is recommended as first-line therapy in some general surgery clinics.

The aim of this report was to present the success of crystallised phenol application for three adolescents with PS.

**CASE PRESENTATION**

A 14-year-old boy with recurrent PS is hospitalised. He was operated because of a PS when he was 13 and Karydakis procedure was performed. At the early postoperative period he was followed up with daily dressings due to dehiscence of his incision. One year after the complete healing of the wound, he admitted with the complaint of an opening at the buttock cleft. His physical examination revealed an orifice at the inferior edge of his incision.

An 18-year-old girl with PS is hospitalised. She underwent drainage of a pilonidal abscess 3 weeks ago and her physical examination revealed two orifices at the buttock cleft.

A 15-year-old girl with PS is hospitalised. Her physical examination revealed two orifices at the buttock cleft.

All patients were told to be shaved from waist to mid-thigh. The procedure was performed in prone position under local anesthesia. The surgical team put on surgical glasses in order to avoid an ocular splash and permanent blindness. The anus was protected with a cotton swab and the rest of the area was generously coated with nitrofurantoin ointment. All sinus orifices were dilated with a curved mosquito clamp and the hair, debris and granulation tissue were removed (figure 1). Crystallised phenol was applied through the orifices (figure 2). The crystallised phenol liquefied due to the body temperature and filled the sinus. The excess liquid phenol and debris were mopped away in order to protect the skin. A light dressing of gauze was left between the buttocks for 1 day. The patients were discharged immediately after the procedure. They were warned to keep the area clean and free from hair. The patients were seen 2 days after phenol application and first, third and sixth weeks of the intervention.

All patients neither suffered from pain nor needed to take analgesics at the early and late terms of application. The 14-year-old boy and 18-year-old girl did not face any problems afterwards and all sinuses healed completely. The boy is disease free for 13 months and the girl is disease free for 9 months. The 15-year-old girl was followed with regular dressings for 2 weeks because of intergluteal maceration and ongoing drainage that was seen 1 week after the application. She underwent another phenol application and the course after application was uneventful with complete healing of the sinus. She is disease free for 8 months (figure 3).

**To cite:** Gulpinar K, Pampal A, Ozis SE, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2012-008382



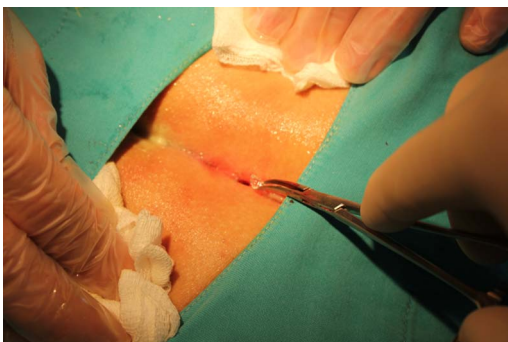
**Figure 1** Removal of hair, debris and granulation tissue.

## DISCUSSION

The ideal therapy for PS is expected to be easy to perform, painless, inexpensive and to promote early return to work with shorter healing period, and lower recurrence rates. Wide ranges of many techniques from minimal invasive interventions through large flap usage were described in the literature regarding the therapy of PS. Despite this fact, no certain therapy exists. Phenolisation of the sinus, though described half a century ago, is being popularised and seems to be a promising therapy option.

Phenol ( $C_6H_5OH$ ) is an organic and mildly acid compound. It is a white crystalline solid at room temperature and can liquefy at higher temperatures. It has antiseptic, disinfectant, anaesthetic and sclerosant properties. Phenol, when applied, fills the sinus cavity and destroys epithelial lining of the sinus. It can be used in liquid form with different concentrations (40–80%), in crystal form or as an ointment.<sup>3 4</sup>

The local amount of hair is an important issue while dealing with PS. Removing the hair from waist to mid-thigh is essential not only before the application but also after the application. It



**Figure 2** Crystallised phenol was applied through the orifice.



**Figure 3** The healed sinus after 8 months.

is crucial to keep the area free from hair and clean for precluding the recurrence.

The application of the crystallised phenol is done via dilation of the orifices smaller than 3 mm or performing a 1 cm incision. The most important issue seems to remove all hair and debris within the sinus before phenol application. As the hair is left in the sinus, the recurrence is inevitable. Dilation of small orifices or a 1 cm incision provides a complete removal of the components. Also dilation of the sinus or the new incision makes the application of the crystallised phenol easier and provides better drainage after the intervention.<sup>5</sup> It is also important to protect the surrounding skin and anus from the strongly irritant phenol before and after the application as the liquefied phenol overflows with debris. The patient can be discharged with a light dressing of gauze as soon as he/she wanted to. At the follow-up period, gradually decreasing discharge from the sinus is acceptable before complete healing.

Either closure of the PS orifices or the relief of the symptoms is accepted as the success after phenol application in the literature. Despite the presented lower rates for closure of sinus orifices after application (49%), high rates for relief of symptoms are reported (up to 95%).<sup>5 6</sup> The mean healing time varied 6.2–8.7 weeks but this did not result that much in days off work.<sup>3 5 7</sup> The common aim was to repeat the procedure within 2–4 weeks if leaking persists.<sup>5</sup> Abscess formation, cellulites, skin and fat tissue necrosis are the common complications with a ratio of 7–16%.<sup>3 8</sup> These complications are generally related to the irritant phenol overflowing from the sinus, and are easily treated with topical care.

The overall success is accepted to be lower for the ones who had prior surgery. The scar formation and poor blood supply at the intergluteal cleft are the causative factors of failure.<sup>9</sup> Also, Dag *et al*<sup>10</sup> found that the number of sinus orifices more than three and history of abscess drainage are related to higher cavity volume and higher cavity volume is directly related to the failure of phenol application. We applied phenol once to a patient with recurrent PS, and to a patient with a history of pilonidal abscess. Also we had to apply phenol twice for a patient. None of our patients experience any other problems during their follow-up.

It is obvious that this case report is weak evidence for the success of phenol therapy for PS and studies are needed to compare the success of phenol to different surgical techniques. However, we think that crystallised phenol application can be a good first-line therapy for adolescents desiring less postoperative pain and less days off work with acceptable wound healing period.

**Contributors** All the authors have contributed in writing of the manuscript

**Competing interests** None.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.

## REFERENCES

- 1 Al-Khamis A, McCallum I, King PM, *et al.* Healing by primary versus secondary intention after surgical treatment for pilonidal sinus. *Cochrane Database Syst Rev* 2010;(1):CD006213.
- 2 Maurice BA, Greenwood RK. A conservative treatment of pilonidal sinus. *Br J Surg* 1964;51:510–12.
- 3 Sakçak I, Aşar FM, Coşgun E. Comparison of the application of low concentration and 80% phenol solution in pilonidal sinus disease. *JRSM Short Rep* 2010;1:5.
- 4 Aksoy HM, Aksoy B, Egemen D. Effectiveness of topical use of natural polyphenols for the treatment of sacrococcygeal pilonidal sinus disease: a retrospective study including 192 patients. *Eur J Dermatol* 2010;20:476–81.
- 5 Dogru O, Camci C, Aygen E, *et al.* Pilonidal sinus treated with crystallized phenol: an eight-year experience. *Dis Colon Rectum* 2004;47:1934–8.
- 6 Kayaalp C, Olmez A, Aydin C, *et al.* Investigation of a one-time phenol application for pilonidal disease. *Med Princ Pract* 2010;19:212–15.
- 7 Chintapatla S, Safarani N, Kumar S, *et al.* Sacrococcygeal pilonidal sinus: historical review, pathological insight and surgical options. *Tech Coloproctol* 2003; 7:3–8.
- 8 Kayaalp C, Aydin C. Review of phenol treatment in sacrococcygeal pilonidal disease. *Tech Coloproctol* 2009;13:189–93.
- 9 Stewart TJ, Bell M. The treatment of pilonidal sinus by phenol injection. *Ulster Med J* 1969;38:167–71.
- 10 Dag A, Colak T, Turkmenoglu O, *et al.* Phenol procedure for pilonidal sinus disease and risk factors for treatment failure. *Surgey* 2012;151:113–17.

Copyright 2013 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.

BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact [consortiasales@bmjgroup.com](mailto:consortiasales@bmjgroup.com)

Visit [casereports.bmj.com](http://casereports.bmj.com) for more articles like this and to become a Fellow