

Case Report

Taila Dāha (Cauterization with Oil) an Innovative Approach in Pilonidal Sinus

Summary

Pilonidal sinus is a chronic inflammatory track in mid-gluteal cleft usually associated with hairs with an incidence rate of twenty six per one lakh population. It is more prevalently seen in the natal cleft of hairy middle aged obese, males. Such type of non-healing tracts may be considered as Nāḍivraṇa (Sinuses) and can either be treated by the conventional Kṣārasūtra (mediated seton) therapy or contemporary treatment methods. Irrespective of whatsoeve management protocol adopted, it inevitably needs long term hospitalisation and is associated with complications. A case of a 28 year old male patient, presenting with pain (within tolerable limits) in the natal cleft and frequent occurrence of a pustule which burst out spontaneously on and off, diagnosed as pilonidal sinus (nāḍi vrana) was treated with excision of tract and Tailadāha (thermal cauterization with hot oil) with a combination of yaṣṭimadhu taila and powdered Copper Sulphate (CuSO4). Good haemostasis and uneventful wound healing with a minimally invasive and cost effective treatment was the outcome of study. This study represents an innovative treatment modality in pilonidal sinus.

Keywords: Copper sulphate, Nadivrana, pilonidal sinus, Taila daha

Introduction

Pilonidal sinus is a chronic inflammatory disorder near or on the natal cleft of buttocks that often contains hair and skin debris.[1] This condition has an incidence rate of 26 cases per 100,000 persons worldwide. It is commonly seen in males with a male-female ratio of 4:1; with a maximum incidence seen in second to fourth decade of life and rarely seen after forty five years.[2] Clinical features include the presence of a midline primary pit at the base of natal cleft, usually lined by epithelium and presented with a tuft of hair. Sometimes a single or multiple secondary openings are present either in the middle or lateral to the primary opening which discharges pus. There may be often a palpable track leading from midline pit. Diagnosis is made clinically and essential radiological investigations are required to confirm the direction and ramification of tract.

Several treatment modalities are adopted for its management including excision of sinus with primary closure along with secondary openings, wide excision and laying the wound open, excision and marsupialisation etc. In spite of a variety of measures to manage, pilonidal sinus remains notorious for its recurrence rate. High infection rate and frequent painful dressing changes are a matter of concern. The outcome of reconstructive flap surgeries in pilonidal sinus is satisfactory as it avoids midline scar to reduce the recurrence rate, but this is not cost effective. In Ayurveda different treatment modalities including surgical and parasurgical methods have been found successful in the management of nāḍivraṇa. The combination of excision and cauterization with additive effect of medicated taila is an innovative approach, which improves the refinement and rate of healing which aims at less chance of recurrence. So an attempt was made for simple and effective treatment which in turn also improves the quality of life.

Case Report

A 28 year old male patient reported to Shalyatantra OPD of Amrita Ayurveda hospital on 11th December 2015, with complaints of presence of a pustule over the natal cleft with occasional pus discharge since a year, with tolerable pain. He was being administered antibiotics

How to cite this article: Tripathy R, John NS, Vijayalekshmi S, Nair NJ, Pasupalan S. Taila Dāha (Cauterization with Oil) an innovative approach in pilonidal sinus. Ancient Sci Life 2016;36:104-9.

Received: February, 2016. Accepted: February, 2017.

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Access this article online
Website: www.ancientscienceoflife.org
DOI: 10.4103/asl.ASL_30_16

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since six months which had led to reduction of symptoms temporarily.

He had an associated complaint of low back ache. An MRI of lumbar spine, taken on February 2014 revealed desiccation at L₅-S₁ level. Patient also had a history of Road Traffic Accident (RTA) on October 2007 and had suffered a head injury. As per the discharge summary he was diagnosed with

• Left frontal extradural haemorrhage with pneumo-cephalus due to fracture of left frontal bone
• Bilateral fracture of temporal bone with CSF otorrhoea
• Traumatic sub arachnoid haemorrhage
• Left optic nerve injury.

He had undergone emergency left frontal craniotomy and evacuation of haematoma. He was in coma for four months and gradually regained consciousness and became healthy. MRI-brain taken on 2011 revealed gliotic changes in left anterior temporal lobe. After reporting to us, he was assessed with Revised Rancho Los Amigos Scale for post traumatic brain injuries and found to be in level X.

On general examination, movements at lumbar region were restricted due to low back ache. On local examination at the gluteal region –2 external openings were seen at the midline of natal cleft [Figure 1] without indurations or tenderness which was not permitting a metallic probe into it [Figure 2]. Per rectal examination was done to rule out any extension of tracts from natal cleft, other anal pathologies like presence of haemorrhoids, fissures, tender points or indurations. The patient was advised for an MRI sinogram on 12-12-2015 and the impression was [Figures 6 and 7]

• A blind ending tract in the midline at sacral region with external opening at S₅-Co₁ level and lowering caudally in the subcutaneous plane up to Co₃ level
• Minimal surrounding inflammatory oedema
• No focal collection. Both ischio-rectal fossa appeared normal
• Underlying sacral bone appeared normal
• No fistulous connection with intra-pelvic structures
• Possibility of inter gluteal pilonidal sinus.

On the basis of clinical findings and MRI report the condition was diagnosed as pilonidal sinus. The patient
was advised for excision of tract followed by taila dāha. All routine blood examination were carried out and found within normal limits except ESR which was found to be elevated at 25 mm/hr. On 17th December, the patient was admitted for the procedure. Shaving and fomentation of the lower back and gluteal region were done prior to surgery. Inj. T.T and xylocaine test dose was given. Patient was kept in prone position. Area was cleaned with betadine solution. Patient was draped under aseptic conditions. Local infiltration was given with 2 ml of 1% lignocaine. A sterile probe was introduced gently into the sinus. On exploration the length of the tract between two openings was found to be approximately 5 cm. It was excised by keeping the probe in situ [Figure 3]. The tract was curetted well expelling out all unhealthy tissues. After that taila dāha (cauterisation with hot oil) was done [Figure 4]. 20 ml of yaṣṭimadhu taila[14] was heated till boiling and it was mixed well with 5 g of fine powder of CuSO₄ (which was expected to cause

![Figure 5](image-url)  
**Figure 5:** 0 day dressing with yaṣṭimadhu taila

![Figure 6](image-url)  
**Figure 6:** Magnetic resonance imaging report page one

![Figure 7](image-url)  
**Figure 7:** Magnetic resonance imaging report page two
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Yasṭimadhu taila was kept in [Figure 5] between the wound edges to prevent apposition of wound edges thus promoting healing by secondary intention. The wound was dressed with yasṭimadhu taila and bandaged.

The patient was shifted to post-operative ward and was kept under observation for 2 hours. He experienced burning sensation which was within tolerable limits for about 10 minutes. The complaint subsided during that period and he was discharged on the same day.

A prescription containing internal medication of Guggulu paṇcapala cūrna[9] 5 g bid. with honey, Triphalā guggulu[10] (500 mg) 1 tab tid., with Aragvādādi kaṣāya[8] 15 ml was advised for 5 days. He was posted for review on the 3rd day [Figure 8] to change the dressing. On the first review the wound was healthy without discharge. Greenish blue colour was not present. De-sloughing was done and the wound was dressed with yasṭimadhu taila. Thereafter patient was reviewed for every alternate day for dressing up to 21 days [Figures 9 and 10]. He resumed his work after five days of procedure [Figure 11]. The follow up period was uneventful [Figure 12]. The quality of life was also assessed by Cardiff wound impact Questionnaire and found improved.

Discussion

Pilonidal sinus is a chronic inflammatory and persistent track in the natal cleft often considered as a congenital or acquired disease. In congenital type a persistent midline pit occurs from birth due to defect in the embryonic fusion. It frequently gets infected due to desquamated epithelial debris in those who lack of proper hygiene.[11]

In acquired variety, the presence of a deep natal cleft, obesity, excess hair and sweating creates a favourable atmosphere for skin maceration. Moisture can fill a stretched hair follicle, which helps to create a low oxygen environment that promotes the growth of anaerobic bacteria. The hairs broken off by continuous friction gets collected in the cleft causing local dermatitis and inflammation around these loose hairs. Once the sinus is formed, intermittent negative pressures of the area suck other loose hairs into the pit, which is often lined by stratified squamous epithelium. The direction of track in majority is cephalad.[12]

In the present case wherein the patient was bed ridden following coma for 4 months, the part being hairy and continuous friction over the area might have triggered the condition. Here the hair lodged in the natal cleft acted as a foreign body which caused a persistent sinus. On analysing symptoms it can be compared to śalya nimittajā nāḍī vrāṇa.[4] The management for śalya nimittajā nāḍī vrāṇa[5] (sinus caused due to impacted foreign body) may be adopted in this condition. Acharya Suśrutha emphasises chedana (excision) either with śastra (surgical instruments)
Past history - patient had pain and discharge of pus on & off since 1 year for which he took antibiotics. H/O RTA in 2007, emergency craniotomy & evacuation of haematoma was done; In coma for 4 months

Current illness - Pilonidal sinus(c/o a pustule in the intergluteal region which was occasionally discharging)

Physical examination - 2 external openings present at midline of natal cleft without induration or tenderness

MRI Sinogram - A blind ending tract in the midline at sacral region with external opening at S3-C01 level and lowering caudally in the subcutaneous plane up to C01 level

Diagnosis - Pilonidal sinus

11-12-15
11-12-15
12-12-15
12-12-15
17-12-15
19-12-15
23-12-15
28-12-15
4-1-16
8-1-16

The sinus track was probed and excised it with probe in situ. Tailadaha was done with a mixture of 20 ml yashtimadhu taila and 5g fine powder of CuSO4. Haemostasis was attained and dressed with yashtimadhu taila

1st review - Wound edges had slough, desloughing was done. No discharge was present. Margin & surrounding skin was healthy. Dressing done with yashtimadhu taila

3rd review - Healthy wound; floor raised with granulation tissue. Slough was negligible. Cleaning and dressing done

5th review - Wound was clean with healthy granulation tissue. Dressing done with yashtimadhu taila

8th review - Wound was healthy, surface area of the wound reduced, dressing done with yashtimadhu taila

10th review - Wound edges apposed.

Final follow up was on 10th February 2016.
Result - Healthy scar, No signs of inflammation, Skin around was healthy, Proper wound healing achieved. No evidence any sinus.
or क्षारसूत्र followed by application of vraṇa ropaṇa (wound healing) drugs with ghṛta (ghee), taila (oil) and madhu (honey). Considering the similarities between nādiroga (sinus) and bhagandara (fistula), the treatment principle explained for the latter by Charaka can be adopted in this condition. Virecanā (mediated purgation), eṣaṇa (probing), patana (excision), taila dāha of (cauterisation with hot oil) viśuddha mārgasya vraṇasya dravya tīkṣṇa was adopted with bhagandara Taila CuSO₄ ghṛta Sushruta’s Ancient Science of Life | Volume 36 | Issue 2 | October-December 2016 being widely used as an ingredient in vṛṇavat cikitsā (treatments for wound healing) was the protocol of management adopted here.[6] This treatment can also be a substitute to the much recognised kṣārāṣṭra application which needs frequent painful thread changes and leaves behind considerable scar tissue after healing. Thus an alternative management strategy with minimal invasion reduces patient discomfort due to painful dressings, minimises secondary infections and ultimately improves the QOL.

The choice of the procedure taila dāha was adopted with a multi-dimensional aim. Dāhana with taila is a measure to control bleeding immediately after excising the sinus tract which explains Sushrūta’s idea of haemostasis by dāhana (thermal cauterisation). Taila being a dravya with properties like stīkṣma (penetrating) tīkṣa (fast acting to expel impurities), lekkhana (scarifying), vyāvāyi (entering into the minute pores and spreading quickly), viṣada (cleansing),[3] spreads into the unidentified ramifications of tract if present thus preventing the recurrence of disease.

Finely Powdered CuSO₄ particles in taila form a suspension and provide adjuvant effect to the oil used. CuSO₄ is known for its vṛṇa dosa-hara (cleansing the wound debris) property and its references can be traced to Rastarāṅgini. CuSO₄ being widely used as an ingredient in vrṇaropana (wound healing) preparations are supportive evidence to the same.[7] Contemporary medicine has also appreciated its use in medicines for wound dressings. Studies have proved that CuSO₄ promotes wound healing by enhancing angiogenesis which is an important event in wound healing. Histological analysis of wound edge tissue substantiated that CuSO₄ treatment not only accelerated wound closure but the quality of regenerating tissue was distinctly different. It was associated with more hyper-proliferative epithelial tissue, and the density of cells in the granulation layer of copper treated wound was clearly higher. This also helps in the formation of fibronectin, a large extracellular matrix cell adhesion glycoprotein, which causes matrix deposition.[13]

Scientific studies have proved that Yaṣṭimadhu (Glycyrrhiza glabra) helps in contraction of wound, epithelisation, inflammatory cell infiltration and tissue organization thus aiding in healing of wound. In short the procedure of taila dāha with CuSO₄ is more or less chemical cauterisation that helps in wound debridement and promotes healing.

This single case study faced some limitations along the course of treatment. The proportion of CuSO₄ to yaṣṭinadhū taila was fixed as 1:4 with a random logic. This could be altered depending on chronicity and fibrosis of tract. Burning sensation though limited to few minutes was a concern in treatment. A complete standardisation of the entire procedure cannot be attained with a single study. In spite of these limitations, this case study was found successful as a minimally invasive, cost effective and easy OPD procedure. This strategy needs further research to standardize the procedure.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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