Review Article

www.ijrap.net (ISSN:2229-3566)

AN OUTLOOK ON PILONIDAL SINUS WITH SPECIAL REFERENCE TO NADI VRANA: A REVIEW

Aishwarya. S^{1*}, Siddayya Aradhyamath²

¹ PG Scholar, Department of PG Studies in Shalya Tantra, JSS Ayurveda Medical College, Mysore, Karnataka, India

² Professor and Head, Department of PG Studies in Shalya Tantra, JSS Ayurveda Medical College, Mysore, Karnataka, India

Received on: 05/07/21 Accepted on: 23/08/21

*Corresponding author

E-mail: ayshu4@gmail.com

DOI: 10.7897/2277-4343.1205151

ABSTRACT

Pilonidal sinus is an epithelium lined tract, containing hairs and unhealthy diseased granulation tissue. It is a very common disease encountered in clinical practice. It is often challenging owing to its higher chances of recurrence. Due to its similarity in features, the disease is being compared to Nadivrana according to the classics of Ayurveda. Despite the vast advancements in the field of medicine and surgery, the management of this disease remains agnostic. Though there are around 17 different techniques enumerated for the treatment of this condition, no gold standard method has been evolved in treating it. The classic of Ayurveda explains a set of treatment methodologies that not only provides a cure to the disease but also prevents the recurrence of the same which is the most notable complication of the disease. This article is aimed at throwing light into the disease and its various treatments adopted, both from modern and ayurvedic perspectives.

Keywords: Pilonidal Sinus, Nadivrana, Jeep disease, Ksharasutra

INTRODUCTION

The art of surgery evolved from the way of healing wounds because the trauma was the only primary cause that man had identified in the early days. The earliest references of surgery trace back to the pages of Rigveda. From time immemorial till date the field of surgery has seen a tremendous ascend in the graph of treating various diseases. Despite the enormous advances in the medical field, Pilonidal sinus, a relatively benign and historic disease, remains a bane. Pilonidal sinus is an epithelium lined tract, containing hairs and unhealthy diseased granulation tissue. Owing to its similarity in features, the disease is being compared to Nadivrana according to the classics of Ayurveda. Nadivrana is a track that is caused by the presence of unhealthy granulation tissue, pus, hair etc. Pilonidal sinus is a common problem encountered in clinical practice and is often challenging to the surgeon due to its increased chances of recurrence. Though multiple methods of management have been described for Pilonidal sinus, there is no evidence of a perfect solution. Acharya Sushruta has emphasized a minimally invasive technique Ksharasutra¹ while explaining the management of Nadivrana. This article is aimed at creating awareness of the disease and the current trends in its management.

Pilonidal sinus

Pilonidal Sinus derived from the words, *Pilus* meaning hair and *nidus* meaning Nest, refers to a cavity or sinus in the subcutaneous tissue with a tuft of hair embedded in granulation tissue which communicates with the skin surface by a track lined by squamous epithelium which continues with the epidermis². The disease was first described by Herbert Mayo in 1833 as a chronic inflammatory condition of the Natal cleft. The term Pilonidal sinus was coined by Richard. M. Hodges³ in 1880. Since its incidence was more in jeep drivers in Second World War, the condition also bears a synonym Jeep disease. It is estimated that

3 out of 10000 individuals suffer from Pilonidal sinus worldwide⁴. The disease is more commonly spotted in hairy men of 20-30 years of age; but can also occur in women. The occurrence in males is 6 times more than in females⁵. The sites of occurrence are interdigital clefts in hairdressers, axilla, umbilicus, eyelids, scalp, face etc., the commonest being the inter buttock sacral region.⁶

The disease with the presentation of sinus opening to the midline natal cleft is regarded as the primary variety and those opening elsewhere than the midline natal cleft are the secondary varieties of Pilonidal sinus. Tender swelling is seen just above the coccyx, with serosanguinous or purulent discharge, with throbbing and persistent pain. The tuft of hairs⁷ may be seen in the opening of the sinus. The patient may also present with the typical symptoms of an abscess. Necessary investigations may be carried out to rule out the conditions like Posterior anal fistula, Hidradenitis suppurativa, Tuberculosis, Perianal abscess, Sacrococcygeal teratoma or Folliculitis which mimic the symptoms.

Figure 1: Pilonidal Sinus with Primary opening

Figure 2: Pilonidal sinus with multiple Secondary openings

The treatment of Pilonidal sinus may be categorized under two headings- conservative management if the condition is not supervened by infection and surgical management if infected. Conservative management includes rest, baths, local antiseptic dressings, and administration of broad-spectrum antibiotics. Surgical intervention may also be categorized into two, open surgery and closed surgery. The posture adopted for surgery is the Jackknife position where the patient is prone with buttocks elevated. Methylene blue may be made use of for the identification of multiple tracks. All sinus tracks, unhealthy granulation tissue and hairs are removed completely. The different methods used for the surgical management of the condition are as mentioned below.

a) Wide excision

This is a safe procedure with a recurrence rate of 15%, where the skin along with the sinus tract is removed with a wide bore local excision. The only disadvantage is that the wound size is large and takes a longer healing time of about 6 weeks with daily dressing.

b) Excision with Z-plasty

In this method the surgeon loosens triangular flaps on each side of the midline to fill the cavity with points of flap towards the head and foot. It is the deep intergluteal fold that predisposes to pilonidal sinuses and this architecture is materially altered with Z-plasty. This method has shown good results, but the chances of flap necrosis are its disadvantage.

c) Karydak's excision

Developed by Greek surgeon, George Karydak's, this method changes the shape of the actual cleft to a shallow one and allows for better healing. The surgeon removes all the diseased tissues and makes the wound healthy. The resultant defect, an ellipse-shaped cavity lies on one side parallel to the cleft. The edges of the skin are freed up a little and the wound is closed with multilayered stitches. By almost flattening the cleft the gathering of the loose hair is less likely and it doesn't favor the growth of anaerobic bacteria as well.

d) Limberg Rhomboid flap method

This method is adopted in patients who have extensive Pilonidal sinus affecting both sides of the buttocks. the surgeon removes an oblong-shaped plug containing the abscess, skin, and fat, thus creating a cavity. To fill the cavity, a flap of skin and thick fat is mobilized from the buttock beside and below the cavity. The flap is swung into the center and the edges are sutured.

e) VY Flap method

It is an advanced flap technique that achieves the suture line away from the midline, obliteration of natal fold and coverage of defect

without tension. It has the advantage of a robust blood supply and better healing effects.

f) Laser Pilonidoplasty

This is a minimally invasive procedure carried out by Leonardo laser. A small cut is made on the skin and all the pus is drained out. The entire sinus tract is then sealed with the laser fibre. The patient is discharged within 24 hours and can return to routine work by the 5th day. Wound healing occurs in about 6-8 weeks and thus recovery is much faster as compared to conventional Wide excision. The recurrence rate is negligible

g) Buie's marsupialization of the sinus track

The sinus track is incised, and edges are sutured to the skin edge all around using silk or vicryl. This reduces the healing time and promotes healing.

h) Davies and Starr buttock skin flap rotation

In this method buttock skin flap is rotated into the defect and the secondary defect is closed at a later stage.

i) Lord and Millers limited excision of primary track

The primary track is excised to 0.5 cm depth, the tuft of hair along with unhealthy granulation tissue and debris are removed using a tiny brush and nylon bristle and allowed to heal.

j) Bascom technique of excision

Sinus is approached through multiple small lateral incisions and pus and hairs are removed and cleansed. These lateral incisions are either sutured or left open for spontaneous healing to happen.

k) Injection of phenol into the track

This is done after the removal of hairs. Phenol is allowed to be in contact with epithelium for 3 minutes to create a branch in the track orifice.

l) Lahey and Cattell's relaxing skin incisions

This is done on one buttock to relieve tension on main wound sutures with later closure secondary wounds by sutures or flaps.

Nadivrrana

Nadi means a reed, vrrana denotes an ulcer. Thus, Nadivrrana is an ulcer having a track. Acharya Vagbhata enumerates that in conditions where a Pakwa shoph⁸ is left untreated or the patient continues Mithya ahara vihara or is afflicted by a Shalya, then there are chances of developing a Nadivrrana. As a Pakwa shoph is neglected, the Puya collected inside further penetrates deep into Ashta sthanas⁹ of vrrana namely twak, mamsa, sira, snayu, sandhi, asthi, Koshtha and Marmas eventually resulting in the manifestation of Nadivrrana. There are 5 types of Nadivrrana explained by Acharya Sushruta, among which Shalyaja Nadivrrana¹⁰ could be compared to the Pilonidal sinus as the tuft of hair acts as the Shalya here. Various texts have quoted hot, frothy, or churned clear discharge mixed with blood associated with continuous pain as the features of Shalyaja Nadivrrana. The chikitsa of Nadivrrana falls under three main headings namely, Ksharasutra prayoga, Varti Prayoga and Shastra karma¹¹. When the Nadivrrana occurs in emaciated, weak, or fearful persons or above Marma Sthana, then the intelligent surgeon should adopt the Ksharasutra technique, rather than excising the Nadivrrana using the shastra¹². Pradhana Shastra karma includes Eshana (probing), Bhedana (Incision), Aharana (extraction of Shalya) and Shodhana (Cleansing of the track), followed by various Lepana and application of taila for Vrrana Ropana. Different formulations of varti are explained by the classics of Ayurveda as an effective method in managing Nadivrrana. Some of them are Ghontaphaladi varti, Dhatturadi varti, Snuhi arkadi Varti,

Aragwadhadi varti, Jatyadi varti, etc. Various formulations like Saptanga Guggulu, Vidangadi Choorana, Karchura taila, Nirgundi Taila, Hamsapadi taila¹³ etc. are also mentioned in the same context.

Figure 3: Ksharasutra prayoga

Figure 4: Vartis prepared for insertion into the track

Figure 5: Shashtra karma performed, and the tuft of hair extracted

Complications and Prevention

Acharya Sushruta has enumerated that, dosha prakopa (derangement of the three doshas), vyayama (exercises), abhighata (trauma), ajeerna (indigestion), harsha (excitement), krodha (anger), bhaya (fear) are the reasons for the dehiscence of a wound¹⁴, which even holds good in the case of Nadivrana too. Even though not a life-threatening condition, Pilonidal sinus can be annoying due to its high recurrence rate. There are chances of causing complications like Sacral osteomyelitis, Necrotizing fasciitis and rarely meningitis. The causes of recurrence involve improper removal of track, entry of new tuft of hairs, breakage of scar, irregular shaving, and poor hygiene. Thus, avoiding the causative factors, regular shaving of body hairs from natal regions and maintaining good perineal hygiene could prevent this condition from manifesting.

DISCUSSION

Nadivrana is a track containing Puya which has entered the underlying structures. Among the 5 types of Nadivrana, Shalyaja Nadivrana holds good for Pilonidal sinus as the Shalya here is Bala or hair which is mentioned as one among different Shalya by Acharya Sushruta. As mentioned in the classics, when a Pakwa shopha is left untreated it traverses to the deeper tissues resulting in Nadivrana. Hence an intelligent surgeon should be able to diagnose the Pakwa avastha of any swelling to render the apt treatment. Pilonidal sinus is a very common problem encountered in clinical practice. Even though the most common site of Pilonidal sinus is at the natal cleft, it can also be present at various other parts of the body. There is continued debate over the pathogenesis of Pilonidal Sinus and subsequently, around 17 surgical methods of management are developed to date. Despite all the advancements in the field of medicine and surgery, there is no perfect method explained for the treatment of Pilonidal sinus. Whereas the treatment methods cited by Acharya Sushruta like Varti prayoga, Ksharasutra prayoga and Shashtra karma holds good even to date in providing relief and preventing the recurrence of the condition.

CONCLUSION

Pilonidal Sinus is often a challenging condition to every surgeon due to its higher chances of recurrence. Acharya Sushruta's Shalyaja Nadivrana can be compared to the Pilonidal sinus owing to its similarity in features. Gender, occupation, and lifestyle of the person play major roles in resulting in this condition. Varti prayoga, Ksharasutra prayoga and Shashtra karma as explained by Sushruta provide a holistic approach in the management of Pilonidal Sinus. Ayurvedic methods of treatment not only provides relief to the patient but also prevents recurrence, which is a major complication of the condition.

REFERENCES

1. Acharya Sushruta. Visarpanadistanaroga chikitsa Adhyaya. In: Sushruta Samhita, Acharya, Y.T (ed.) Visarpa Nadi Sthana Roga chikitsa adhyaya. Varanasi: Chaukhambha Orientalia; 2009. p. 468.
2. Gordon P, Nivatvongs S, Barrows S, Gunn C. Principles and Practice of Surgery of Colon, Rectum, and Anus. 3rd ed. New York, NY: Informa Healthcare; 2007. p. 734.
3. Hodges R. Pilonidal sinus. Boston Med. Surg. J 1880; 103: 485–48. [Google Scholar] 02.06.2021
4. Mahmood, F, Hussain, A. Pilonidal sinus disease: Review of current practice and prospects for endoscopic treatment. Ann Med Surg (Lond) 2020; 57: 212–217.
5. Das, S. A Concise Textbook of Surgery (6th ed.). Kolkata: Dr S Das; 1994. p. 981.
6. Rajasekharan D, Nagaraja JB, Subbarayappa S. Pilonidal sinus in South India: A retrospective review. Indian J Colorectal Surg 2019; 2: 71-6.
7. Bhat, S.R. Rectum and Anal Canal. In: Bhat, S.R (ed.) SRB's Manual of Surgery. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2019. p. 958-960.
8. Vagbhata Acharya, S.R. Grantharabuda shleepada apachi nadivijnaniya adhyaya. In: Kunte, A.M, Navare, K (eds.) Ashtanga Hridaya. Varanasi: Chaukhambha Orientalia; 2011. p. 883.
9. Acharya Sushruta. Vranasravavijnaneeya Adhyaya. In: Sushruta Samhita, Acharya, Y.T (ed.) Vranasravavijnaneeya Adhyaya. Varanasi: Chaukhambha Orientalia; 2009. p. 108.
10. Acharya Sushruta. Visarpanadistanaroga nidana Adhyaya. In: Sushruta Samhita, Acharya, Y.T (ed.) Visarpa Nadi Sthana

- Roga nidana adhyaya. Varanasi: Chaukhambha Orientalia; 2009. p. 308.
11. Acharya Sushruta. Visarpanadistanaroga chikitsa Adhyaya. In: Sushruta Samhita, Acharya, Y.T (ed.) Visarpa Nadi Sthana Roga chikitsa adhyaya. Varanasi: Chaukhambha Orientalia; 2009. p. 468.
12. Acharya Sushruta. Visarpanadistanaroga chikitsa Adhyaya. In: Sushruta Samhita, Acharya, Y.T (ed.) Visarpa Nadi Sthana Roga chikitsa adhyaya. Varanasi: Chaukhambha Orientalia; 2009. p. 468.
13. Acharya Sushruta. Visarpanadistanaroga chikitsa Adhyaya. In: Sushruta Samhita, Acharya, Y.T (ed.) Visarpa Nadi Sthana Roga chikitsa adhyaya. Varanasi: Chaukhambha Orientalia; 2009. p. 469.
14. Acharya Sushruta. Krutyakrutyavidhi Adhyaya. In: Sushruta Samhita, Acharya, Y.T (ed.) Krutyakrutyavidhi adhyaya. Varanasi: Chaukhambha Orientalia; 2009. p. 111.

Cite this article as:

Aishwarya. S and Siddayya Aradhyamath. An outlook on Pilonidal Sinus with special reference to Nadi Vrana: A Review. Int. J. Res. Ayurveda Pharm. 2021;12(5):86-89 <http://dx.doi.org/10.7897/2277-4343.1205151>

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IJRAP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publishing quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJRAP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of IJRAP editor or editorial board members.