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RESEARCH ARTICLE

LIMBERG FLAP IN MANAGEMENT OF SACROCOCCYGEAL PILONIDAL SINUS: OUR EXPERIENCE

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Abstract

Sacrococcygeal pilonidal sinus is a common disease condition occurring in young adults 26 per 10,0000With male prepondence. Many surgical procedures have been described in literature yet there is no single gold standard procedure on offer. Our study aimed to look for the outcome of limberg flap in patient of primary or recurrent pilonidal sinus. A total of 34 patients with both primary and recurrent pilonidal sinus where operated under spinal anesthesia between January 2017 to October 2020. Of the 34 patients operated 2 developed wound seroma ,1 has wound infection and there was no recurrence. We found limberg flap reconstruction to be safe and a straightforward procedure with low complication rate and low recurrence which is not true for many other surgical procedures described in literature.

Introduction:-

Pilonidal derives its origin from latin – “Pilus” meaning “Hair” and “Nidus” meaning “nest”. Sacrococcygeal pilonidal disease is a common and a well recognized entity seen mostly in young adults. The disease was first described by OH Mayo in 1833.1 It usually occurs in the intergluteal region, although it may occur anywhere else such as in the axilla, umbilicus and in the finger webs in hair dressers.2 the incidence of pilonidal sinus is 26 per 100000 people3. Males are twice as commonly affected as females4. The disease is mostly acquired with deep natal cleft and excessive hair in the cleft being the predisposing factors5. Other risk factors include obesity, smoking, familial tendency and poor body hygiene6. The diagnosis is based on history, physical examination (including anorectal examination) and evaluation of symptoms and risk factors7. Findings include midline pits in the superior gluteal cleft8.

The management of pilonidal sinus is controversial and gold standard treatment modality has not yet been established. Surgery is the principal method of treatment and several techniques have been proposed. Excision and packing, primary closure, marsupialization and flap techniques are the surgical procedures employed9. Limberg rhomboid flap was defined by Limberg in 1946 10 in which the gluteal cleft was flattened by using a full thickness flap. This flap is easy to perform, with sutures away from the midline giving rise to a tensionless flap of unscarred skin in the midline, which in good hygiene maintenance , reducing sweating maceration, scar formations amd erosions. Limberg flap reconstruction, as per the available literature, was found to be superior to primary closure11 and other flap procedures12 and a safe method in Sacrococcygeal pilonidal sinus disease with low complications and low recurrence rates.

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The aim of this study was to evaluate outcome of Limberg flap surgery in Sacrococcygeal pilonidal sinus, its complications and long term recurrence rates .

Methods:-

This was a prospective study conducted on 33 patients from January 2017 to October 2020 at Government Medical College , Anantnag. Most of our patients had primary pilonidal sinus disease and some presented as recurrent disease after previous surgery. Majority of the patients were males. Of those 8 were females. Average age of patients was 25 years, oldest was 31 years old, and youngest was 16 years old. All patients were subjected to complete history taking and detailed clinical examination, local examination and laboratory investigations. Written consent was obtained from all patients after explaining the procedure and associated complications. Proforma of all the patients was made preoperatively. Patients with local skin pathologies like fungal infection, eczema, lichen planus were excluded from the study.

Figure 1:- Primary pilodidal sinus.

Limberg flap surgery was performed under spinal anesthesia in all patients. Patients were placed in prone jack knife position. Buttocks were adequately strapped for wide exposure. A rhomboid area of skin is marked around pilonidal sinus involving all midline pits and lateral extension if any. The long axis of the rhomboid in midline is marked as A–C, C being adjacent to perianal skin, A placed so that all diseased tissues can be included in the excision. The line B–D transects the midpoint of A–C at right angles and is 60 % of its length. D–E is a direct continuation of the line B–D and is of equal length to the incision B –A, to which it will be sutured after rotation. E–F is parallel to D–C and of equal length. After rotation, it will be sutured to A–D (Figure 2)13. The skin and subcutaneous fat to be removed is excised down to deep fascia, and a rhomboid area of specimen including pilonidal sinus and its all extensions are removed (Figures 3& 4). Then flap is raised so that it includes skin, subcutaneous fat, andthe fascia overlying gluteus maximus, rotated to cover midline rhomboid defect (Figure 5). The defect thus created can be closed in linear fashion (Figure 6). Deep absorbable sutures to include fascia and fat are placed over a vacuum drain, and then finally the skin is closed in interrupted sutures 14. The operation produces a tension-free flap of unscarred skininthemidline. Intravenous antibiotics were given for 5 days followed 5 day oral antibiotic therapy. Supine position was avoided for 2 days. Ambulation was advised on first post operative day. Suction drain was removed on day 3rd. sutures were removed on 10th post operative day in most of the patients (Figure 7). Postural advices for avoiding pressure on the flap were given for 7 days. Daily wound dressings were done for 10 days after which wound were kept open. Follow up was done weekly for 3 weeks , then monthly for 6 months.

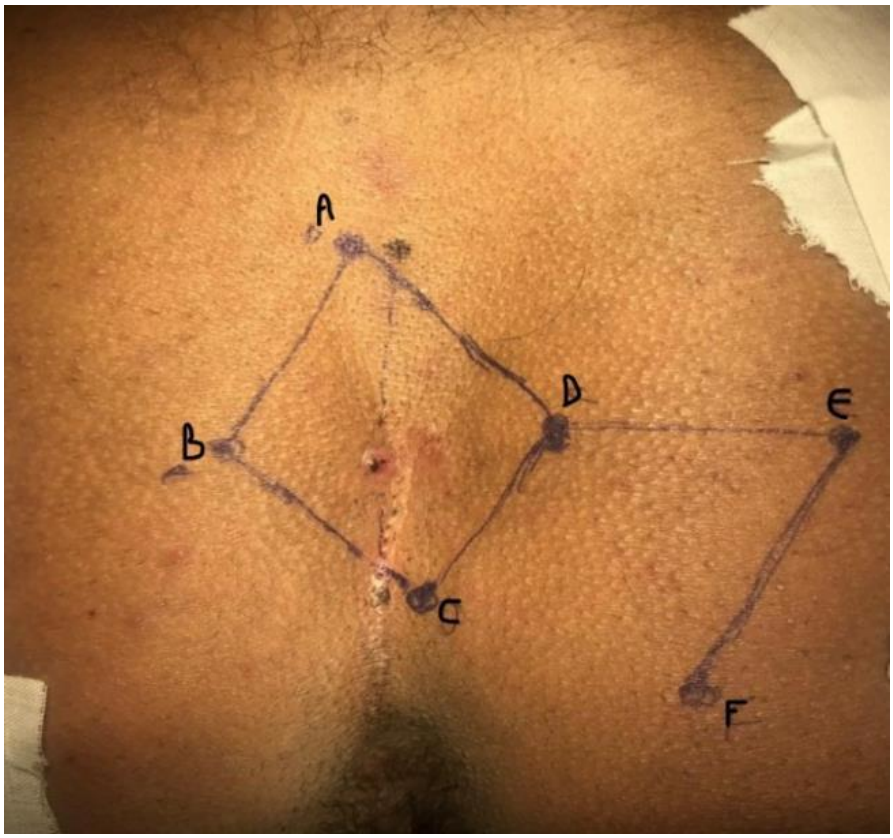

Figure 2:- Pilonidal sinus with markings.

Figure 3:- Incision.

Figure 4:- Excision of pilonidal sinus.

Figure 5:- After flap mobilization and rotation.

Figure 6:- After closure.

Figure 7:- After suture removal.

Results:-

In our study 34 patients were included who presented with pilonidal sinus between January2017 to October 2020. All patients underwent Limberg flap surgery under spinal anaesthesia. 26 patients were males and 8 were females. Mean age of patients was 25 years (range 16 to 31 years). 30 patients had primary disease and 4 had recurrent disease. Follow up was done weekly for 3 weeks , then monthly for 6 months. Two female patients had wound seroma that took around two weeks to heal completely . One male patient developed wound infection which was managed with twice daily dressings, broad spectrum intravenous linezolid as per culture sensitivity showing MRSA. It took around 3 weeks for healing with some scarring. In all other patients wound healed nicely with minimal scarring with no recurrence. Most of our patients resumed their normal work after 4 weeks of surgery.

Discussion:-

Sacrococcygeal pilonidal sinus is a disease of concern especially for young adults causing prolonged morbidity loss of work days and recurrence. Different surgical methods of treatment have been employed . there is no ideal treatment procedure as yet, however, flap reconstruction procedures employed nowadays have a better outcome in terms of cosmesis and recurrence flap reconstruction procedures having a midline lower edge are more likely to increase recurrence rates and wound infection rate. We chose limberg flap reconstruction because it is an off midline closure and ensures flattening of the gluteal furrow. We found the procedure to be safe, very easy to perform with low complication rates and high patient satisfaction. Because of it being a tension free full thickness flap it achieves good cosmesis and low reccurence. The limberg rhomboid flap appears to be ideal because it corrects the etiological factor for pilonidal sinus disease i.e deep natal cleft with excessive hair in the midline thus it is better than simple excision and primary closure, marsupilization and other flap reconstruction procedures.

Many previous studies have determined the usefulness of limberg flap in the management of pilodidal sinus disease and the out come has been found to be comparable to our study. Onermentes et al in 2008 performed a study to evaluate advantages and long term results of limberg flap surgical technique15. They operated upon 353 patients with both primary and recurrent pilonidal sinus and found that only 3.1 percent had recurrence and there was no complications . faisalshabbir in 2014 compared primary closure with limberg flap technique16. 60 patients where studied. 4 patients developed recurrence after primary closure, 1 after limberg flap. Wound infection was seen in 8 patients with primary closure and in 2 patients with limberg flap. Aslam MN performed a study on 110 patients full primary healing was obtained in all patients , only 1 patient developed recurrence17. Katsoulis had 25 patients 16 of then had complications and none developed recurrence.18

In our study 2 patients developed wound seroma 1 developed wound infection which was completely cured with wound dressing and antibiotics. There was no recurrence.

Conclusion:-

Pilonidal sinus disease is a troublesome disease and treatment is challenging because of high rates of recurrence. Limberg flap reconstructions procedure offers simple, relatively straightforward surgery with quick healing time and very low recurrence chance and no major complications.

References:-

1. Sondenna K, Anderson E , Nesvik I, Soreide JA. Patient characteristics and symptoms in chronic pilonidakl sinus disease. Int J Colorectal Dis. 1995;10(1):39-42(Pubmed)
2. Lee PJ, Raniga S, Biyani DK, Watson AJ, Faraghern IG, Frizella FA. Sacrococcygeal pilonidal disease. Colorectal Dis 2007;10:639-52.
3. Ferri FF, Ferri's clinical advisor, 2018. Philadelphia:Elsevier;2018
4. Humphries AE, James E (2010) Evaluation and management of pilonifdal disease. SurgClin North Am 90(1):113-124.
5. Onder A , Girgin S, Kapan M, Toker M, Arikanogluz, Palanci Y et al. Pilonidal sinus disease : Risk factors for postoperative complicatioms and recurrence. Int Surg. 2012 Jul-sep : 97(3);224-9
6. Marks J, Harding KG, Hughes LE, et al. Pilonidal sinus excision-healing by open granulation. Br J Surj 1985;72:637-40
7. Johnson EK, Vogel JD, Cowan ML, Feingold DL, Steele STR., Clinical Practice Guidelines Committee of the American Society of Colon and Rectal Surgeons' Clinical Practice Guidelines for the management of Pilonidal Disease. Dis colon Rectum. 2019 Feb;62(2):146-157

8. SondenaaK,AndersenE(1995) Patient characteristicsandsymptoms of in chronic pilonidal sinus disease. Int J Colorectal Dis 10(1):39–42
9. Mohamed HA, Kadry I, Adly S (2005) Comparison between three modalities for non-complicated pilonidal sinus disease. Surgeon 3 (2):73–77
10. Wolfe SA, Limberg AA, M.D, 1894-1974: Plastic reconstructive surgery 56(2): 239-240.
11. Akca T, Colak T (2005) Primary closure with Limberg flap in treatment of pilonidal sinus-randomized clinical trial. BJS 5074:1081–1084\
12. Azab AS, Kamal MS, Saad RA, Abount AL, Atta KA, Ali NA (1984) Radical cure of pilonidal sinus by a transposition rhomboid flap. BJS 71(2):154–155
13. Farquharson EL, Rintoul RF (2005) Farquharson's Textbook of operativegeneralsurgery,9thedn.HodderArnoldPublication,London,pp 457–458
14. Kapan M, Kapan S, Pekmezci S, Dugun V (2002) Sacrococcygeal pilonidal sinus disease with Limberg flap repair. Tech Coloproctol 190:388–392
15. Mentes O, Bagci M, Biglin T, Ozgul O, Ozdemir M (2008) Limberg flap procedure for pilonidal sinus diseased: results of 353 patients. Langenbecks Arch Surg 393(2):185–189
16. Shabbir F, Ayyaz M, farooka MW, Toor AA, sarwar H, Malik AA. Modified Limberg flap versus primary closure for treatmwnt of pilonidal sinus disease: a comparative study. J Pak Med Assoc. 2014 Nov;64(11):1270-3
17. Aslam M, Choudhry A (2009) Use of Limberg flap for pilonidal sinus—a viable option. J Ayub Med Coll Abbottabad 21(4)
18. Katsoulis IE, Hibberts F, Carapeti EA (2006) Outcome of treatment of primary and recurrent pilonidal sinus with Limberg flap. Surgeon 4(1):7–10, 62.