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DIAMOND FLAP ANOPLASTY FOR ANAL STENOSIS – A CASE REPORT

General Surgery

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ABSTRACT

Post hemorrhoidectomy Anoplasty with Y-V flap, V-Y flap, C flap, U flap, House flap and Rotational S flap are used to treat surgery refractory stenosis. A 67-year-old male was admitted with the complaints of severe perianal pain during defecation for 1 week which was associated with bleeding per rectum. After evaluation, anoplasty with diamond flap was done. The use of diamond flap is discussed in this case report.

KEYWORDS

INTRODUCTION

Anal stenosis is a rare but serious complication of anorectal surgery commonly followed by hemorrhoidectomy, excision and fulguration of anorectal warts, endorectal flaps, or proctectomy, particularly in the setting of mucosectomy [1]. 90% of anal stenosis follows hemorrhoidectomy [2]. Due to of removal of excessive rectal mucosa without minimal or no mucocutaneous bridges. Patients usually present with painful or difficult defecation, rectal bleeding, and constipation [1]. Eliciting careful history including anal procedures like hemorrhoidectomy and rectal examination pinpoints the diagnosis of anal stenosis. Treatment of anal stenosis will vary depending on the location, severity, and cause of the stenosis [3]. Conservative management like stool softeners, fiber-rich supplements, adequate fluids, and anal dilation can be advocated for mild to moderate anal stenosis. However, if the patient remains symptomatic and refractory to conservative management surgical approach is indicated. The ideal surgical technique should be simple with fewer complications, low hospital stay, and with good satisfactory results. Surgical techniques using flaps like mucosal advancement flap, Y-V flap, V-Y flap, C flap, U flap, House flap, Diamond flap, Rotational S flap are used recently to relieve patient's symptoms [2]. The presence of various techniques indicates that all methods have their own merits and demerits. Hence it is wise to use a technique which is simple with a good outcome. Diamond -flap anoplasty is one among such surgical technique which is less commonly described and used. We herewith report a case of anal stenosis managed with anoplasty using the diamond flap technique.

Case Presentation

A 67-year-old male was admitted with painful defecation and bleeding per rectum for a duration of one year with recent aggravation of symptoms. He had no history of vomiting, abdominal distension, itching over the perianal region, and weight loss. He had a surgical history of hemorrhoidectomy done 15 years back. On digital rectal examination revealed tight low anal stenosis admitting only tip of the little finger. X-Ray erect abdomen revealed multiple short air-fluid levels (Figure 1) in the small bowel called “A string of pearl appearance” was visible with proximal small bowel obstruction. No demonstrated clinically significant opacity was seen. The preoperative testing included a complete blood count, serology, and chest X-ray which was normal. In view of tight anal stenosis, the patient was planned for anoplasty. Under aseptic condition, patient in lithotomy position, using a skin marker diamond-shaped incision site was marked on the left perianal region. A straight line was drawn from the summit of the diamond flap and extended across the stenosis. Adrenaline was injected along the marked site to prevent bleeding. The incision is never extended the dentate line. The initial part of surgery focuses on releasing the stricture. Internal sphincterotomy was added as the internal sphincter muscle was scarred and stenosed. Once adequate anal dilatation is obtained diamond flap is marked (Figure 2). The incision was deepened till the subcutaneous plane without undermining the flap resulting in no damage to underlying subcutaneous vessels. The flap was advanced and sutured with the rectal mucosa with 4 O' vicryl and the flap edges were approximated with similar suture material (Figure 3). The patient was examined on days 1, 2, and 7 for early complications. The postoperative period was uneventful, and the patient improved symptomatically.

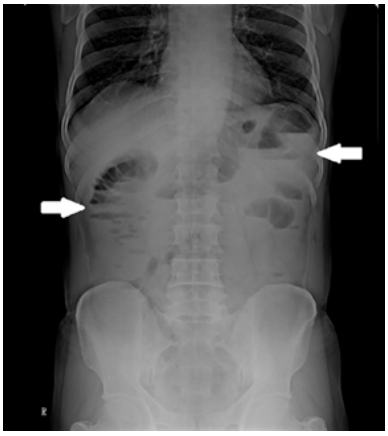

Figure 1: X-Ray erect abdomen revealed multiple short air-fluid levels

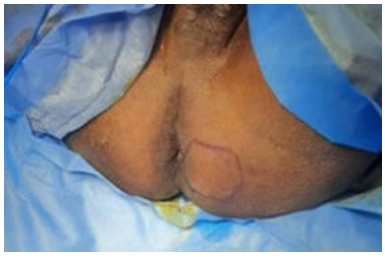

Figure 2: Diamond shaped incision site was marked on left perianal region using skin marker

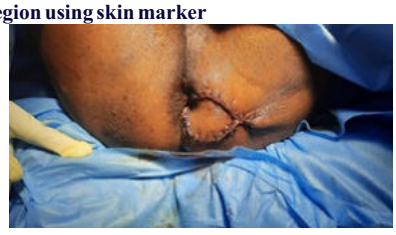

Figure 3: Completed diamond shaped flap

DISCUSSION

Anal stenosis is a serious but avoidable complication following hemorrhoidectomy. Literature describes plenty of techniques for the correction of anal stenosis, but the choice of technique depends on the severity of stricture and surgeons' experience. No standard technique is available in the literature for the management of anal stenosis. Many flap techniques like mucosal advancement flap, Y-V flap, V-Y flap, C flap, U flap, House flap, Diamond flap, Rotational S flap described for anoplasty. However, diamond flaps are considered as preferred techniques, with good results. The diamond-shaped was designed to cover the defect in the intra-anal portion [2]. The key principle in this

technique consists of increasing the diameter of the anal outlet and removal of cutaneous scarring by proximal or distal advancement [3]. The use of unilateral or bilateral flaps depends on the degree of stenosis [2]. The low failure rate and postoperative discomfort followed this procedure are due to the use of lateral sphincterotomy which gives more space for anal dilation. Gonzalez AR et al [4] showed a 100% healing rate among patients who underwent diamond flap anoplasty in severe anal stenosis. The key success of this technique depends on flap reparation is considered a key important factor that requires preservation of subcutaneous fat and wide mobilization to maintain flap viability, avoids suture line tension, and prevents damage to the blood supply [5]. From the previous pilot studies, it is evident that comparing to other techniques diamond flap technique has low complications and a high patient satisfaction rate. The diamond flap is mobilized with minimal undermining to preserve the integrity of the subcutaneous vascular pedicle to avoid vascular necrosis when compared [3] to V-Y anoplasty where the tip of the V is subjected to ischemic necrosis. In Y-V flap the proximal part of the flap is very arrow and will not allow for a significant widening of the stricture above the dentate line, also the tip of the V within the anal canal is subject to ischemic necrosis from lack of mobilization, the tension of the flap or loss of vascularization [6, 7]. In C and in U flaps the donor site is left open [6]. To conclude, the diamond flap technique is simple, easy to perform with low complication and a good postoperative recovery rate, especially for low anal stenosis.

CONCLUSION

Diamond flaps are considered a preferred technique, with good results.

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