

Cleft Lift Operation for Recurrent Pilonidal Sinus Repair; Two Years Experience

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ABSTRACT

Although pilonidal disease is quite common, controversy still exists about the treatment. The procedure should cure the patient, and allow speedy resumption of normal activities by reducing pain and disability. Relatively few data exists that focus on an optimal surgical approach that should be followed in cases of recurrent pilonidal disease. The aim of this study was to describe the technical details, analyze the advantages, and present the early results of a modified Bascom asymmetric midgluteal cleft closure technique applied in patients with recurrent pilonidal disease in King Saoud Hospital, Al-Qassim, King Saudi Arabia (KSA). Among the 23 males and one female patients (median age, 21; range, 18-26 years) who underwent Bascom's procedure (cleft lift operation) for pilonidal disease performed by the author, as to evaluate healing time and recurrence rate. The complete lateralization of wound closure and flattening of midgluteal groove was achieved. All patients tolerated the procedure well, with minimal to moderate postoperative discomfort. Full return to duty was possible in three weeks after surgery. There was 3 patients of limited primary healing failure. No recurrences have developed in a short mean follow-up period of 20 months.

Conclusion: The suggested Bascom's technique is an attractive, safe, easily performed operation with minimal morbidity and can be reliably used as a second-line surgical option for recurrent pilonidal disease.

INTRODUCTION

Pilonidal disease was first reported in 1833. Sacrococcygeal pilonidal sinus is a common disorder among young adults. It is observed most commonly in people aged 15-30 years, occurring after puberty when sex hormones are known to affect the pilosebaceous gland and change healthy body hair growth. The onset of pilonidal disease in people older than 40 years is rare [1]. The pilonidal sinus and abscess were thought to be secondary to a congenital remnant of an epithelial-lined tract from postcoccygeal epidermal cell rests or vestigial scent cells [2]. Pilonidal disease is now widely accepted as an acquired disorder based on the observations that congenital tracts do not contain hair and are lined by cuboidal epithelium. The

recurrence of the disorder after complete excision of the disease tissue down to the sacrococcygeal fascia and the high incidence of chronic pilonidal sinus disease in patients who are hirsute, further support an acquired theory of pathogenesis [3]. Strong evidence shows that pilonidal disease originates in the epidermis in a midline stretched hair follicle [4]. This follicle is a "pore" or "pit" of origin and is analogous to an epidermal inclusion microcyst. Early pilonidal changes are amplified by further and deep tissue disruption from moisture, anaerobic conditions, hair and bacteria. Fistulas develop as extensions of chronic pilonidal abscesses when hair, debris, and air are sucked into an abscess cavity by a subcutaneous vacuum [5] that forms during repeated standing and sitting. On the bases of these observations, a new paradigm of origin emerges that pilonidal disease is exclusively an epidermal problem, rather than a deep tissue problem, which is the theory behind current recommendations for wide excision [6-8]. Pilonidal wounds remain open if conditions in the gluteal cleft are unchanged. Therefore, the focus of treatment should be actions to change the conditions that attack epidermis, rather than wide excision, which attack deep and healable tissue.

The hospitalization of these patients for the treatment of pilonidal disease resulted in a loss of productivity, a loss of earnings, and a disruption of education because patients recovered in the hospital.

The surgical options for management of a non-complicated chronic pilonidal sinus include excision with primary closure [9], excision and laying open of the tract [10], wide and deep excision to the sacrum, incision and marsupialization, and phenol injection [11]. Skin flaps have also been described to cover a sacral defect after wide excision. Similarly, this keeps the scar off the midline and flattens the natal cleft.



Fig. (1): The buttocks are pushed together before surgery and contact is marked.



Fig. (2): Diagram of preoperative marking, ellipse of skin to be removed is marked in red; the area to be mobilized is shaded by blue.



Fig. (3): The ellipse of skin to be removed is marked, and skin to be mobilized is outlined.

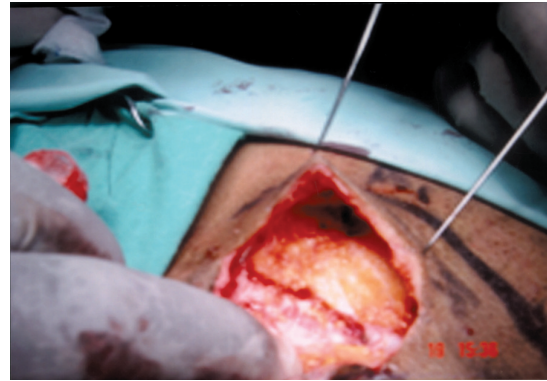


Fig. (4): Skin flap 7mm thick is dissected for coverage.



Fig. (5): Subcutaneous drain inserted, and skin closed with subcuticular sutures.



Fig. (6): After stitches removal, with lifting of the cleft and lateralisation of the suture line.

The advancement flap or Karydakis [12] procedure begins by excising the wound, with the sinuses removed en bloc with an elliptical specimen of overlying skin. The incision is made off midline. Once the wound is excised, a full-thickness flap is created on the opposite side of the semilateral incision. This allows the opposite side to be mobilized to allow primary wound closure, thus avoiding a midline wound. Local advancement flaps, such

as the Z-plasty, rhomboid flap or V-Y advancement flap [13]. Complex wounds are reconstructed using muscle and myocutaneous flaps because these flaps typically heal well and cover areas of extensive skin loss [14].

More recently, Bascom and Bascom [15] described modification for Karydakis [12] and Kitchen [16] procedure, which will be presented in this study.

PATIENTS AND METHODS

Twenty four patients were referred for care after repeated failure of previous pilonidal surgeries. All had persistent open wounds and had undergone at least 2 pilonidal operations.

The procedure was carried out under general anesthesia with the patient in a jack knife position. After shaving off the hairs around the sinuses and cleaning the area with Povidone Iodine, the buttocks are pushed together before surgery and the contact is marked (Fig. 1), Methylene blue dye mixed with hydrogen peroxide was injected in one of the external opening to give a guideline about the tract and branching.

An ellipse of skin 4cm wide (Figs. 2,3) adjusted more to the left and including the openings of the sinuses but keeping the subcutaneous tissues including the abscess cavity which is scrubbed clean with gauze, fistulas between secondary openings are cleaned by sponge soaked with povidone iodine. There is no need to excise or close fistulous tracts; they will heal by secondary intention.

Skin flap is freed from the right side and advanced across the midline to be sutured to the other edge with subcuticular polypropylene sutures over a subcutaneous suction drain which usually removed after 4 days (Figs. 4,5). Combination of metronidazole and cephalixin sodium given intravenously 30 minutes before surgery and 4 doses in the first postoperative day and oral cephalixine hydrochloride given 4 times a day for 4 days. Ambulation and sitting begin immediately postoperative and hospitalization for 24 hours.

RESULTS

A total of 24 patients (23 males, and one female), were admitted to the study in King Saud Hospital, Al-Qassim, KSA. The median age, 21; range, 18-26 years; all patients had persistent open wounds and had undergone at least two pilonidal operations. Patients included in this study underwent the cleft lift procedure. The mean period of follow-up was 20 months (range, 2 months to 30 months). Wounds in all 24 patients healed without recurrence, 21 immediately, with sutures removed 12 days after operations (Fig. 6). In the other 3 patients wounds healed slowly as the residual open segments of their wounds closed secondarily (two obese and one diabetic).

DISCUSSION

In spite of high incidence of pilonidal disease affecting young population and the prolonged

disabling period caused by it, surgeons have not reached to unanimity about the best treatment for this condition [2].

The advocates of excision and primary closure of the wound using different techniques emphasize on quicker healing time, fewer postoperative visits and shorter time off work [3,4,17]. Those favoring simple excision or lay-open technique, are of the opinion that if general patient satisfaction, period of hospitalization and the recurrence rate are the criteria, then their was a far better method than the other complex procedures. However, it has been reported that the chances of infection are much higher in the wounds created by excision and suturing [17]. Incidences of wound dehiscence following excision and primary repair are much more than previously thought [16,18]. These procedures also require a long hospital stay and long periods off work. Rather than primarily closing a midline or lateral vertical incision, some physicians advocate the use of asymmetrical or oblique elliptical incisions in an attempt to keep incisions out of the natal cleft where wound healing is poor and to prevent unnecessary tension on the closure of the wound. The goal of the asymmetric incision is to reduce the depth of the gluteal fold, thereby eliminating the frictional forces between the 2 opposing skin edges. Although the use of an incision that crosses the vertical gluteal fold to excise the pilonidal cavity does eliminate a vertical suture line within the gluteal fold, healing times may remain considerable [12].

Skin flaps have also been described to cover a sacral defect after wide excision. Similarly, this keeps the scar off the midline and flattens the natal cleft. The potential complications include loss of skin sensation in the flap, which is observed in more than 50% of patients, and necrosis of the flap edges. Again, primary healing is achieved in 90% of cases [1,6,7,13,14].

Excision of the pilonidal sinus and laying the tract open to allow healing by secondary intention has been described as an option to ensure that the cavity has adequate drainage. This avoids a wound infection after primary closure. Consider laying the tract open when the primary closure is not free of tension. Even after excision of the pilonidal sinus down to healthy presacral fascia, the wound is still considered contaminated. Both aerobic and anaerobic organisms are found in 50-70% of wounds [10,18]. The disadvantages of laying the tract open are the inconvenience to the patient, with frequent dressing changes, and close observation of the wound to ensure proper wound healing

and avoid premature closure of the skin edges. The average time for wound healing to occur is approximately 6 weeks. Laying the tract open is always appropriate when a cellulitis is surrounding the pilonidal sinus.

Primary wound closure versus wound healing by secondary intention are the 2 principal surgical options for a chronic pilonidal sinus. Differences remain between these 2 techniques in terms of wound healing and recurrence [19]. Although primary closure has the potential for earlier wound healing if infection does not occur, it does require that the patient restrict many activities until wound healing is complete. The incidence rate of failed primary healing is approximately 16%. This is because a primary closure is rarely completely free of tension and the wound is considered contaminated despite excision and debridement. Recurrence rates after primary closure may be as high as 38%. Although excision of pilonidal disease and healing by secondary intention requires longer healing time, it is associated with a lower rate of recurrence [10,17-19]. The success of the cleft lift procedure strongly supports a new paradigm in the etiology of pilonidal disease, whereby epidermal damage and repair are the key elements in pathologic features and cure. In comparison to all we encouraged the patients to return to their normal activity as soon as possible because it was observed that the wounds healed more quickly in those patients who resumed their normal routine before the patients treated by other procedures.

There is no denial that the number of visits needed and the time taken for the wound healing was significantly more in the technique used by us when compared with the other procedures. But considering the complexity of these extensive procedures, period of hospital stay, consumption of inpatient hospital resources, need of antibiotics and the need to repeat procedure in case of wound dehiscence or complications, the advantages of the procedure developed by Bascom and Bascom [15] do outweigh the other procedures. This is particularly so in a developing country which is struggling to provide better health care to its masses.

The technique was found suitable in patients having limited, chronic pilonidal sinus disease with active symptoms like pain, discharge, bleeding and pruritus.

Many current instructions for pilonidal care [6-11] call for wide excision of all granulating wounds, abscesses, tunnels, and fistulas, often to the periosteum. However, the wide excision follows an

old paradigm that holds that defective and inflamed deep tissues are the source of none healing in pilonidal disease. Our findings suggest that deep tissue damage, although obvious, is not the primary source of none healing, but rather is a secondary effect. Thus, the primary source of surgical failures is not week deep midline tissues but rather the shape of the gluteal cleft, which creates the moist, warm, bacteria-friendly environment.

This new paradigm of epidermal origin of pilonidal disease has important implications for initial management of the disease. Armstrong & Barcia [19], Rickles [20], and Theodoropoulos et al. [21] all left tissues in place as we did in this study, with similar success. Cleft lift technique differ from Karydakos [12] and Kitchen [16] as in our study we avoid their step of removal of all deep inflamed tissue and use of thick flaps of fat attached to skin, since we shift skin alone, so it reduces the depth of the natal cleft. It relocates the healing line, moving it out to the surface. Muscle and fascia are never divided or shifted.

Conclusion:

In summary, the goal for treatment of pilonidal disease is 2-fold. The first is excising and healing with a low rate of recurrence. The second is minimizing patient inconvenience and morbidity after the surgical procedure and avoiding hospitalization with loss of workdays.

The suggested modified Bascom technique is an attractive, safe, easily performed operation with minimal morbidity and can be reliably used as a second-line surgical option for recurrent pilonidal disease.

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