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# Modified rhombic excision for en-bloc excision of pilo-nidal sinus disease (PNSD): A technical innovation

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## ABSTRACT

**Purpose:** To design a modified rhombic excision for complete en-bloc removal of primary and secondary sinuses of pilo-nidal sinus disease (PNSD).**Aims and objective:** The sole aim and objective was to achieve radical cure of pilo-nidal sinus disease having eccentrically located primary sinus with multiple secondary sinusesin the median natal cleft. **Material and methods:** The modified rhombic excision is marked to have transverse long diagonal and vertical short diagonal extended downwards in natal cleft as two parallel lines to constitute a rectangle. The rhombic excision will include primary discharging sinus and upper part of natal cleft and the rectangular excision will cover all secondary sinuses located in the natal cleft. The rectangular excision will form distal margin of the rhombic flap (Limberg flap). Flap closure will achieve near total obliteration of upper part of natal cleft and eccentric suture lines, and the lower part of natal cleft will maintain its normal aesthetic look. Results and observations: Modified rhombic excision proved successful in en-bloc excision and radical cure of PNSD. **Conclusion:** This simple modification, where rhombic excision is combined with rectangular excision along the extended short diagonal, has ensured radical excision of lesion in en-bloc.

**Key words:**Pilo-nidal sinus disease (PNSD). Rhombic excision. Modified rhombic excision. Radical excision.

## I. INTRODUCTION

Large number of treatment options exist for pilo-nidal sinus disease (PNSD) with variable recurrences [R1,2].None of the single procedure has been quoted as a preferred mode of radical cure. However, most studies lay emphasis on Limberg flap as theflap of choice [R3,4]. Authors have modified the pattern of rhombic excision with its rectangular extension towards the natal cleft for en-bloc radical excision of the total extent of PNSD.

## II. MATERIAL AND METHODS

After stabilizing the patient on operation table in prone jack-knife position with both buttocks retracted laterally by adhesive tape, cleansing and draping was done.Methylene blue dye is injected throughmedian or eccentrically located discharging sinus to identify inter-communications (Fig.1a, Fig.1b).Thereafter, a rhombus was marked with its long diagonal placed transversally across the natal cleft to include primary discharging sinus, and extension of its short diagonal downwards as rectangular marking to include all secondary sinuses of the natal cleft (Fig.2). The rhombic excision with its rectangular extension in the natal cleft will have an en-bloc excision of PNSD, thus ensuring radical excision of the diseased tissues (Fig.3). The margin of this rectangular excision will form the distal margin of the planned Limberg flap designed to re-surface the post-excisional defect.The flap closure will cause obliteration of the upper part of natal cleft, leaving the lower part of the natal cleft un-displaced to give normal appearance(Fig.4).Similarly, after modified rhombic excision, inferiorly based Limberg flap can be raised(Fig.5) to re-surface the upper and lower part of the surgical defect (Fig.6). The suture lines are also placed eccentrically.

## III. DISCUSSION

Treatment of pilo-nidal sinus disease(PNSD) ranges from simplest medical treatment to minimally invasive to the most complex surgical excisions and re-constructive procedures. In the present era, out of the available multiple flaps, Limberg flap is the most preferred flap because of its multiple advantages [R5]. In

simple rhombic excision, the main discharging sinus is excised and the other shallow, dry or minimal discharging sinuses of lower part of natal cleft are just curetted and allowed to heal spontaneously.A rotation or transposition or advancement flap, having widthequal to the length of the rectangularly excisedsinuses of the natalcleft,will berequired to cover whole of the surgical defect [R2], and the resultant look of such obliteratednatal cleft may not be aesthetically acceptable to both the patients and the operating surgeon.By using the presently described modified rhombic excision, it had become possible to (i) include primary and secondary sinuses in en-bloc excised specimen of tissue, (ii) re-surface the defect by elevating conventional Limberg flap, (iii) obliterate upper part of natal cleft, (iv) preserve the lower part of natal cleft for aesthetic purposes and (v) obviate need ofsubsequent creation of a shallow median depression along the whole length of the natal cleft in sensitive patients for aesthetic appearance.

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Fig.1a.

Fig.1b.

Fig.2.

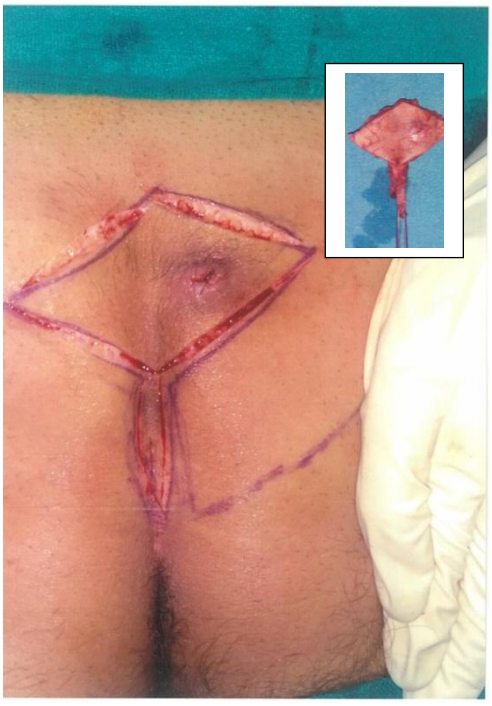

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Fig.3.

Fig.6.

Fig.4.

Fig.5.

**Legends to figures**

Fig.1a. Methylene blue dye is injected through secondary sinus to detect interconnections.

Fig.1b. Methylene blue dye is injected through primary sinus to detect interconnections.

Fig.2. Marking of rhombic excision, rectangular excision and the Limberg flap.

Fig.3. Rhombic excision and rectangular excision in progress. En-bloc excision of primary and secondary sinuses shown in inset.

Fig.4. Obliteration of upper part of natal cleft. The lower natal cleft is maintained for aesthetic purposes.

Fig.5. Inferiorly based Limberg flap being raised.

Fig.6. Inferiorly based Limberg flap re-surfacing the upper and lower parts of natal cleft. Suture lines are eccentric.