

PILONIDAL SINUS – THE MODIFIED KARYDAKIS OPERATION

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In 1973, the late Dr. George Karydakis, in Greece, published his experience with a simple and successful operation to cure Pilonidal Sinus,¹ and later presented the largest personal series in the world.² He excised the sinus with a simple biconvex 'elliptical' excision only just crossing the midline to excise the sinus. It was based 1-2cm from the midline with excision down to the sacrum. A thick flap was then created by undercutting the midline side of the wound. This flap was advanced across the midline to meet the other side of the wound with two layers of catgut sutures to the fat around a drain tube. The wound was then closed with skin sutures.

Karydakis believed and taught that hair insertion is the cause of pilonidal sinus and attributed his extremely low recurrence rate of 1% to two facts. These are:

- (a) the whole wound is placed away from the midline (recurrences always occur in the midline) and
- (b) the resulting new natal cleft is shallower (so hairs do not collect so readily).

I had the privilege of meeting Dr. Karydakis on three occasions and appreciated his thorough research and the originality of his ideas.

Despite these good results, the Karydakis operation has been criticised for taking too much fat,³ and for placing sutures into the midline sacral fascia (often causing pain). Most of his patients required general anaesthesia and stayed in hospital a day or more, though towards his death Dr Karydakis was trying to develop ways to simplify the operation for day surgery.⁴

I have followed the Karydakis method since seeing it performed by him in London in 1973. I coined the term the 'Karydakis operation' and published my initial experience in 1981.⁵ Since 1973, I have done the operation since on 318 patients of whom 7 (2%) had a recurrence requiring another procedure (curettage or a repeat Karydakis) and 5 (1%) had slight insignificant wound problems easily dealt with by simple measures without more surgery.

Dr. John Bascom in Oregon, developed a similar operation that he calls 'cleft lift'.³ It results in a similar looking wound off the midline and a shallow cleft, and is very successful in the treatment of difficult recurrent sinuses. I witnessed this operation performed by Dr. John Bascom and his son Dr. Tom Bascom in July 2004, and learned a number of useful modifications to the technique I have been using. Since then I have changed my technique for 50 patients. Now my patients are home sooner (usually within 24 hours), with less pain. Half of these have the operation under local anaesthesia (with intravenous sedation), and there have so far been no recurrences.

The modifications I have made after learning from Drs. Bascom include the following:

¹ Karydakis GE 'New approach to the problem of pilonidal sinus' *Lancet* 1973; **ii**:1414-15

² Karydakis GE: 'Easy and successful treatment of pilonidal sinus after explanation of its causative processes' *Aust NZ J Surg* 1992; **62**:385-9

³ Bascom JU 'Failed pilonidal surgery' *Arch Surg* 2002; **137**:1146-50

⁴ *Personal Communication*

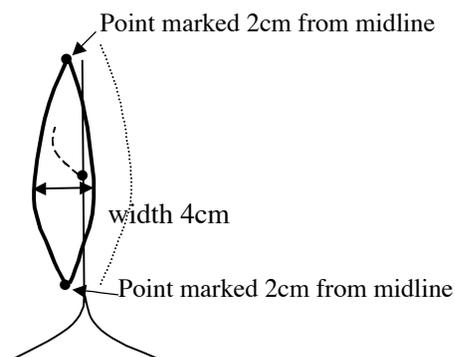
⁵ Kitchen P.R.B. 'Pilonidal Sinus:Excision and Primary Closure with a Lateralised Wound - the Karydakis Operation' *A.N.Z.J.Surg.* 1981; **52**:302-305.

1. The operation can be performed with a liberal usage of local anaesthesia (and adrenaline) which is preferable to general anaesthesia in the prone position. This is possible in non-nervous patients if sinus not too large. Give plenty of time to insert LA slowly under IV sedation with fine needle.
2. The flap should be created first, usually 2cm wide and ~0.5cm deep under the skin
3. Buttock straps should then be removed from the edges of operating table and the skin flap gently pulled across the midline with skin hooks to see if the mark of the outer rim of the 'ellipse' has been made correctly on the skin, and to make adjustments to prevent tension on wound closure. Less may need to be excised from the top end where the cleft is shallower than lower down.
4. The outer limit of excision is then cut with the scalpel, but instead of going down to the sacrum (Karydakis method), the fat is left and only skin and dermis are excised, until the sinus is reached. I then prefer to fully excise the sinus track rather than clean it out as Bascom may do.³
5. John Bascom has reminded me that Karydakis had emphasized the circulation of hairs from a midline primary pit and through secondary openings.² So secondary openings a distance from the main track do not have to be included in the excision (eg, by V cuts on one side or other of the wound to close and result in a T-shaped wound as I once advocated⁶). Rather, they can be curetted, and the openings cleaned out by pulling gauze through them, to eradicate hair particles. Once the primary pit is dealt with, the secondary pits should heal, because the hairs in them should make their way out (if secondary pit is left open to drain).
6. The flap should fit gently across the midline on the fat rolled in from the other side over the suction drain tube. A few fine PDS or vicryl sutures are used in the fat and need not be inserted down to the sacral fascia, unless it was a deep sinus and the fascia was exposed.

I use the term 'Modified Karydakis' rather than 'Cleft Lift' or 'Bascom II' because the basis of the operation is the original work of Karydakis (who deserves the recognition), and to prevent confusion with the simpler operation previously described by John Bascom.⁷

I would add to the teachings of John Bascom with the following points:

1. The 'ellipse' should be marked out on the operating table by first marking two points on one side (the most diseased side), a distance of 1.5-2 cm from the midline and placed far enough apart to allow a gentle curve to be marked out to just cross the midline a few mms. to include the primary pit in the excision. For small sinuses, use 1.5cm from the midline.



⁶ Kitchen PRB 'Pilonidal Sinus - Experience with the Karydakis Flap' *Br J Surg* 1996; **83**:1452-55

⁷ Bascom JU 'Pilonidal Disease: longterm results from follicle removal' *Dis Colon Rectum* 1983; **26**:800-7

2. The distance of maximum width of the 'ellipse' is twice the distance the upper and lower points are from the midline (3-4 cm). This is measured between the marked lines not between the midline and the outer edge
3. After probing the tracks to work out their extent, the use of methylene blue injection into the midline pit will enable all branches to be easily identified in case any are severed or opened during the excision.
4. To avoid a 'dog-ear' at the lower end of the wound tending to 'move' towards the midline, a V excision of skin can be taken off the lower end laterally. This will deviate the lower end a little further from the midline when skin is closed.
5. A fine low-pressure suction drain tube is placed in the fat, brought out lateral to the wound. Allow no suture holes or drain hole to appear in the new midline.
6. Use a subcuticular 3/0 prolene suture loosely knotted as a loop (the wound lengthens when the patient sits, so loose suture needed to prevent a 'cheese-cutter' effect). Support it with a few interrupted 3/0 prolene sutures.
7. IV antibiotic including metronidazole is given during the procedure
8. Patient goes home same or next day after removal of drain tube. All sutures out on tenth day.

