A COMPARATIVE PROSPECTIVE RANDOMIZED STUDY OF FLAP CLOSURE OF PILONIDAL SINUS VERSUS PRIMARY CLOSURE AND HEALING BY SECONDARY INTENTION

Thesis

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By

Dr. Ahmed Desouki Hamed Omara

(M.B.B.Ch., M.Sc) General surgery

Cairo University

Supervisors

PROF. DR. MOSTAFA SOLIMAN.

Professor of General Surgery

Faculty of Medicine - Cairo University

PROF. DR. ASHRAF EL-SEBAIE

Assistant Professor of Plastic Surgery

Faculty of Medicine- Cairo University

Faculty of Medicine

Cairo University

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ABSTRACT

Pilonidal sinus disease is considered as a chronic, intermittent, inflammatory process rarely occurring in congenital cases as extensions of sinus and dura to neural canal. Lately the theory for congenital etiology has been replaced by a theory involving hair insertion to the natal cleft.

A deep natal cleft is an environment favoring sweating, hair penetration, and bacterial contamination. During walking, the buttock movements help hairs to penetrate the skin and cause a foreign body reaction and infection. This gradually leads to pilonidal abscess and/or sinus formation.

In this study 60 patients who had chronic pilonidal sinus disease were randomly divided into three groups, 20 patients each.

We compared rhomboid flap method (20 patient) versus primary closure method (20 patients) and open granulation method (20 patients).

Key Words:

Anatomy & Definition, Incidence, Etiology & pathogenesis, Clinical presentation, Management, Failedpilonidal surgery.

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INTRODUCTION

Pilonidal disease is a common disorder of the sacrococcygeal region. It comprises a variety of problems, including infection, abscess, cyst and the development a chronic sinus cavity ***(Hull & Wu, 2002).***

Pilonidal disease was first reported in 1833 by Herbert Mayo who described a cyst that contained hair just below the coccyx in the following words: "on opening its interior, a certain quantity of pus was evacuated and a lock of loose hair is found more or less matted and of varying size and amount". Hodge in 1880 coined the name "pilonidal" from Latin words pilus which means hair, and nidus which means nest ***(Hodges, 1880).***

The controversies surrounding the origin of pilonidal disease first came to light during World War II from 1941-1944, when multiple case reports describing pilonidal cyst formation in jeep drivers. So many service men were affected with pilonidal disease that was renamed "Jeep disease"

Pilonidal disease or "jeep disease", is a well known complex surgical problem. It is an unglamorous condition that is often difficult to treat. It is an epithelium-lined track (sinus) situated a short distance behind the anus and generally containing hair ***(Purkiss, 1993).***

It is however, not restricted to the inter-gluteal region alone. It is known to occur in inter-digital space in barbers' hands ***(Patel et al, 1990),*** in the axilla, the umbilicus ***(Schoelch & Barrett, 1998),***

above-knee amputation stump ***(Goligher, 1984),*** the nose ***(Paulose et al, 1989),*** and the vault of the skull ***(Guilherm et al, 1999).***

A pilonidal sinus may be asymptomatic for some time. The majority of patients only present with the onset of symptoms, usually pain and discharge. Occasionally a painless lump or swelling may be discovered by the patient while washing, or midline pits during a routine physical examination. Symptomatic disease usually presents as an acute abscess, a chronic abscess, or complex/ recurrent pilonidal disease ***(Soll & Rothenberger, 1990).***

In 1950, pilonidal disease was thought to be of congenital origin rather than an acquired disorder. It was thought to be secondary to a congenital remnant of an epithelial lined tract from postcoccygeal epidermal cell nest or vestigial scent cells ***(Karulf & Perry, 1998).***

Pilonidal disease is now widely accepted as an acquired disorder based on observation that congenital tracts do not contain hair and are lined by cuboidal epithelium, the recurrence after complete excision of diseased tissue down to sacrococcygeal fascia and high incidence of chronic disease in patient who are hirsute support an acquired theory ***(Karulf& Perry, 1998).***

This confusion in etiological origin led surgeons to adopt different approaches to treat pilonidal disease ranging from the least conservative approaches to the most radical and extensive reconstructive approaches ***(Hull& Wu, 2002).***

Excisional surgery either with healing by granulation or primary closure, marsupialization or primary skin grafting has been advocated for the larger and more complicated sinuses. Those operation involving surgical excision frequently require prolonged hospitalization and long follow up with regular dressing to allow healing to occur. The final result is often disfiguring and many patients exhibit a high rate of recurrence ***(Bascom, 1990)***.

New trend in the treatment of pilonidal sinus is the creation of local fascio cutaneous flaps which have the advantages of good primary healing, short time off-work and low recurrence rate ***(Diggory, 1993).***

The ideal approach for treatment should be tailored according to the patient condition. With the best chance for cure and least local recurrence rate, avoid admission to the hospital, avoid general anesthesia, and require minimal wound care and minimal time off work for the patient ***(Hull & Wu, 2002).***

The Aim Of Work

This thesis tries to spot the light on the theories of pilonidal disease and how it occurs.

The aim of this thesis is to compare three different surgical methods of dealing with the pilonidal sinus after radical excision.

These are rhomboid flap closure, primary closure or leaving the wound to heal by secondary intention (open granulation).

ANATOMY OF DEFINITION

Vascular anatomy of the gluteal region

In the sacrum, the lateral sacral artery runs through the anterior sacral foramina, extends its spinal branch into the sacral canal, extends further through the posterior sacral foramina to maintain the posterior surface of the sacrum, and generates vascular communication with abundant branches of the superior gluteal artery distributed over the gluteus maximus muscle. It is therefore possible to make an adipofascial flap that can be extended laterally, with the lateral sacral artery as its nutrient vessel around the posterior sacral foramina at its base. There are four pairs of posterior sacral foramina on both sides within a 2- to 4-cm area of the midline of the sacrum (Fig. 1) ***(Cormack & Lamberty, 1994).***

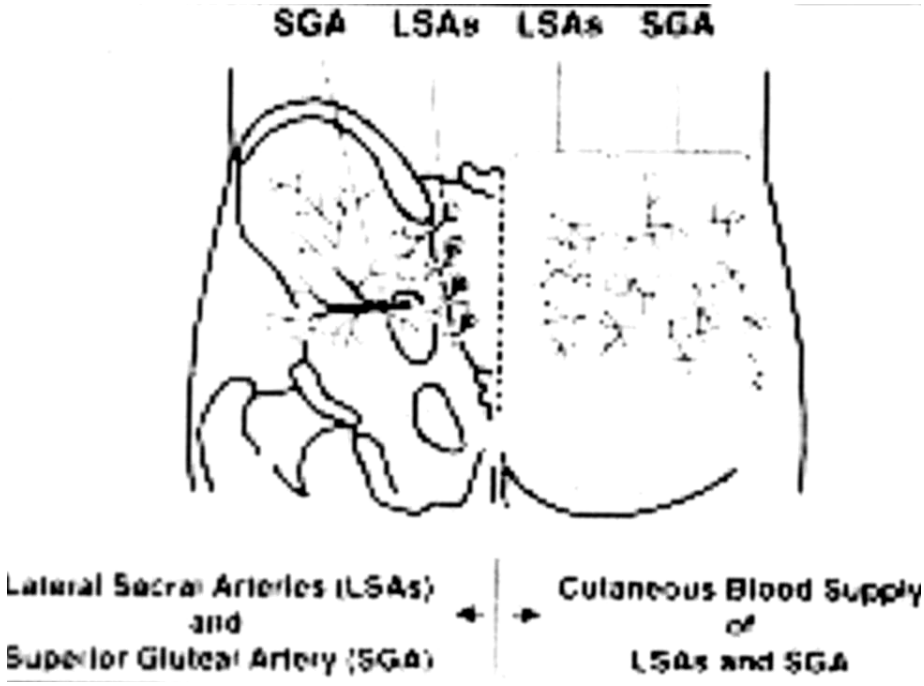

Fig. (1): Vascular anatomy of the gluteal region **(Cormack & Lamberty, 1994).**

Definition:

Pilonidal sinus disease is a chronic foreign body granuloma infection that drains through openings at the cleft ***(Cintron and Abcarian, 2001).***

Synonyms and related keywords:

Sacrococcygeal pilonidal sinus, pilonidal cyst, natal cleft cyst, pilonidal sinus disease, pilonidal sinus, pilonidal abscess, endoanal pilonidal sinus, perianal pilonidal disease, jeep disease ***(James, 2006)***.

Pilonidal cyst is an abscess of pus and hair beneath the outer skin (boil that gone very, very bad) ***(James, 2006).***

Pilonidal sinus is an epithelium-lined track situated a short distance behind the anus and generally containing hair ***(James, 2006).***

The term pilonidal cyst is actually incorrect.99% of all pilonidals are actually abscesses, not cysts. Use of the word “cyst” has caused a great deal of misin formation about treatments among doctors and patients alike. While the terms piolonidal cyst and pilonidal sinus are frequently used interchangeably, they are not technically the same thing ***(Chiedozi et al., 2002).***

A sinus is a cavity that links the abscess with outer skin. Not everyone who has a Pilonidal abscess has A Pilonidal Sinus, the sinus (and there can be more than one) is a small dimple-like hole, usually above the actual abscess, which allows it to drain ***(Chiedozi et* al., *2002).***

The problem of pilonidal disease

Pilonidal disease is a common problem in Primary care due to recurrence following surgery and the need for frequent and time consuming wound care that can cause discomfort, embarrassment and absence from work for thousands of young people (mostly men) annually and no single treatment methods proved to meet all these problems ***(Bascom & Bascom, 2002).***

INCIDENCE

Incidence & frequency:

(a)- Age incidence

The incidence of pilonidal sinus is rare both before puberty and after the age of 40 ***(Sondenaa et al, 2002)***.

The age of the patients varied from 15 to 32 years with an average of 22 years. The maximum incidence was between the ages of 15 and 25 and the incidence decreased thereafter. The age distribution is shown in (Figure 2). ***(Matar, 2007).***

(b)- Sex incidence

The incidence rate of pilonidal disease is approximately 0.7%. Men are affected 2.2-4 times more frequently than women probably due to their more hirsute nature ***(Dwight & Maloy, 1993).*** During a population study done by Matar 2007 involving college students, the incidence rate was found to be Ninety-eight patients (89%)-were males and 12 females (11%). The male to female ratio was 8:1 with significant male predominace. The sex" distribution of patients is shown in (Figure 3) ***(Matar, 2007).***

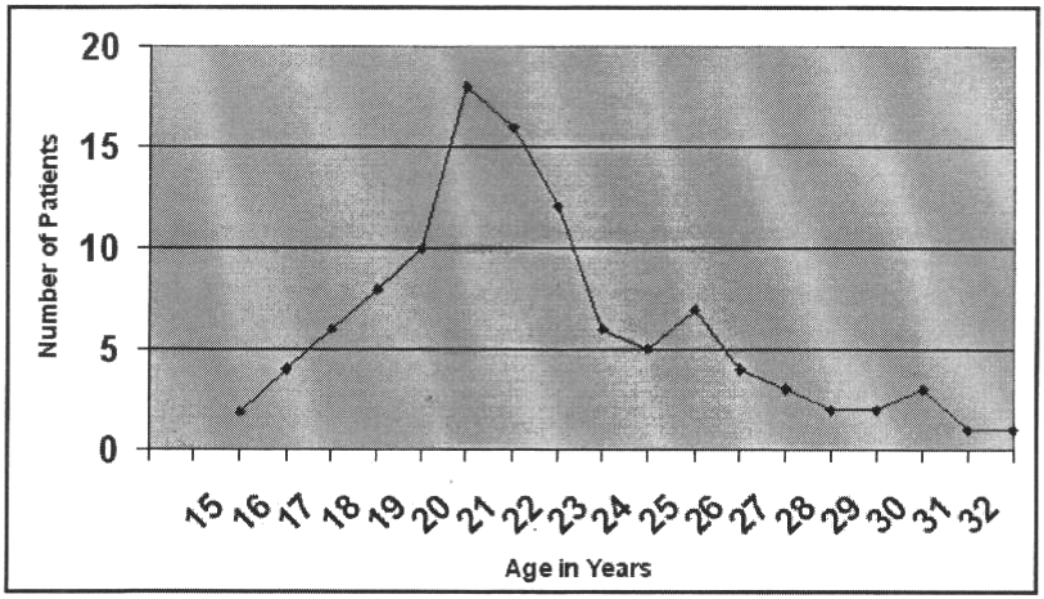

Fig. (2): Age distribution of patients with pilonidal sinus disease ***(Matar, 2007).***

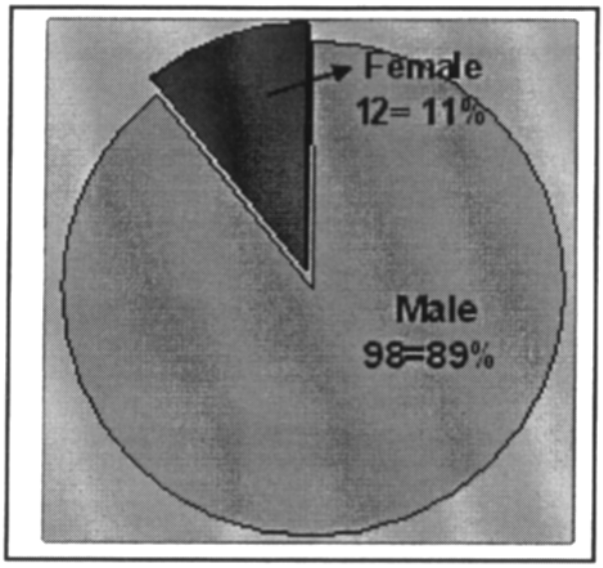

Fig. (3): Sex Distribution of patients with PNS disease ***(Matar, 2007)***