PILONIDAL SINUS

Essay

Submitted for the partial fulfillment
of Master Degree in General Surgery

By
Mohammad Abdel-Mabood Daood
M.B.,B.Ch. (Zagazig University)

Under Supervision of

Prof. Dr. Alaa El-Din Ismail
Prof. of General Surgery
Ain Shams University

Assist. in Supervision
Dr. Khalid Zaki Mansour
Lecturer of General Surgery
Ain Shams University

Dr. Refaat Refaat Kamel
Lecturer of General Surgery
Ain Shams University

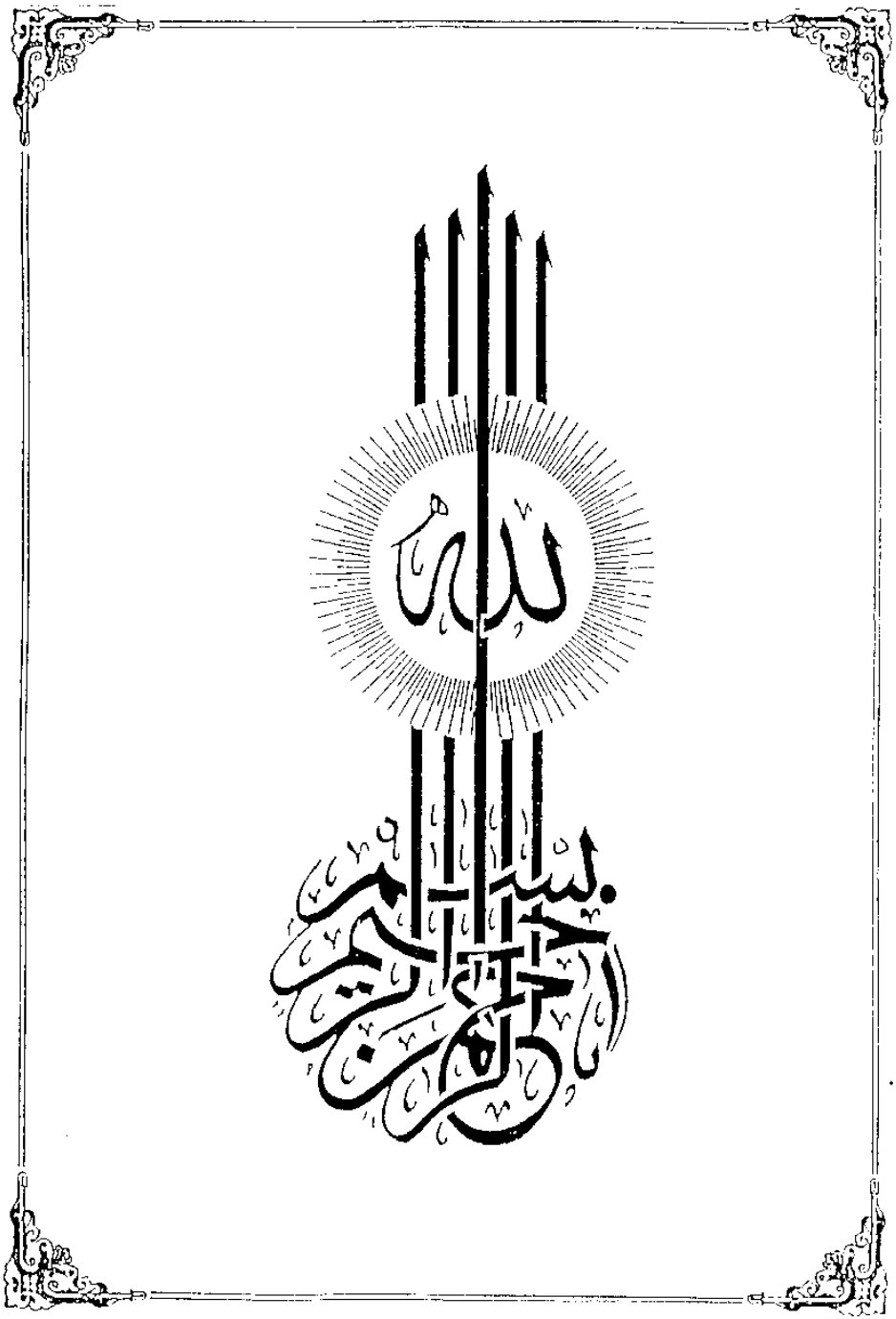
Faculty of Medicine
Ain Shams University
1994

بسم الله الرحمن الرحيم

﴿وقل رب زدني علماً﴾

"صدق الله العظيم"

(سورة طه آيه رقم (١٤)



TO...

My Parents

ACKNOWLEDGMENT

I am indebted and grateful to Prof. Dr.

Alaa El-Din Ismail

Prof. of gerneral surgery, Ain Shams University for his supervision, constant guidance and encouragement contributed to the success of this work.

I wish to express my gratitude to Dr.

Khalid Zaki Mansour

Lecturer of General Surgery, Ain Shams University for his supervision and constant guidance.

Also, my deep thanks and gratitude to Dr.

Refaat Refaat Kamel

Lecturer of general Surgery, Ain Shams University for his help and teaching me and was an erergetic reader.

Last, but not least, I am really indebted to my parents, who offered me their great love, help and encouragement.

Table of Contents

INTRODUCTION

INTRODUCTION

The term pilonidal means "hair-nest" (pilus-hair nidus-nest). It was first described by *Hodges (1880),* who described it as the following: on exposing its interior by an incision, a certain quantity of pus is evacuated, and a lock of loose hair is found occupying the space, more or less matted and curled, and of varying size and amount. The hairs of which it is made up are always short, without bulbs and correspond in colour to those of the patient.

The cavity containing them has no cyst or lining membrane, or other characteristics suggestive of a congenital dermoid cyst; merely the granulating walls of an ordinary supporting sinus, with no trace or suspicion of hairs growing from its surface, or of isolated spots of cuticle from which they might have been shed *(Edwards, 1977).*

Postnatal pilonidal sinus disease is well known for its association with military personnel. One of its commoner synonyms "jeep seat disease" was given to it by american soldiers during the second world war, amongest whom it had reached almost epidemic prevalence, 77,000 cases being admitted to united states hospitals *(Clothier and Hayood, 1984).* The soldiers observed a common association with driving military vehicles especially the jeep. In the jeep, the driver sat

with thigh flexed forcing his flattened sacral region into the seat. Travel over raugh ground causes excessive friction and this was thought to force hairs into the skin.

The true aetiology has long be debated. It is seen mainly in the young adults seldom in middle age, and rarely in the aged.

Pilonidal cysts and sinus occur most commonly in the sacrococcygeal region, but they also occur in other sites such as the beard, the axilla, the umbilicus, the perineum, the amputation stump, the inter-digital web spaces of hands and feet and a case recorded in the penis. The treatment of pilonidal sinus is frequently unsatisfactory and no procedure satisfies all requirements for the ideal treatment of pilonidal sinus, should provide a high rate of cure with a low rate of recurrence should avoid hospital admission, general anaesthesia while involving minimal in convenience and time off work for the patient *(Allen-mersh, l990).*

All authers claim good results from their favoured treatment, but all admit to failure even after very extensive surgery. Repeated treatment failures aggravate the psychological and social consequences to an endurable degree for an individual patients.

INCIDENCE

INCIDENCE

A summary of incidence of pilonidal sinus was described by Kleitsch and Cherry (1952), who suggested the following rules:

1. Young adults: Skin changes due to the sex hormones and the development of secondary sex characteristics. **2. Male:** Narrow pelvis and deep intergluteal cleft, less personal hygiene, greater tendency to hairiness, occupations which produce sacrococcygeal trauma. **3. Hairy:** Increased capillarity in internatal cleft, and hyperhidrosis. **4. Acne:** Increased glandular activity of skin, susceptibility to staphylococcal infections. **5. Obese buttocks:** Deepened intergluteal cleft, greater tendency to foecal contamination by capillarity from the anus, because the vast majority of those individuals affected with pilonidal disease of the sacrococcygeal region belong to a young age group, hence an enormous amount of time may be lost from school and employment as a result of the natural history of the disease and its treatment *(Guyuron et al., 1983)*. Sacrococcygeal pilonidal disease afflicts young adults after puberty *(Allen-mersh, 1990)*. It usually affects males more than females and especially hirsute individuals and the obese who have a deep sulcus between firm, thick buttocks. Racial variations in incidence appears to be associated with differences

in body built and hairiness, thus for instance, it is common in the hirsute Greeks, but rarely seen in smooth skinned orientals *(Thomas, 1968).*

The ratio of males: females admitted to english hospitals in 1985 for pilonidal disease was (1.5:1).

The abscess: sinus ratio (0.7:1) was lower for males (0.5:1) than for females (1.1:1) this may be because pilonidal sinus is more likely to be complicated requiring multiple hospital admission in males *(Allen-mersh, 1990).*

It was noticed that the onset of pilonidal disease is rare after the age of 40 years *(Clothier and Hagwood, 1984).* This observation compatible with association with sex hormones which are known to affect pilosebaceous gland *(Price and Griffiths, 1985).*

This may explain the earlier onset of the condition in women since puberty occurs earlier in females than in males *(Allen-mersh, 1990).* The disease is apparently much commoner in the military service than in the civilian life, this was attributed to:

a. Pilonidal sinus is a disease primarily of youngmen.
b. Conditions of military life may be considered as a predisposing factor to the start of symptoms.

AETIOLOGY

AETIOLOGY

It was believed that pilonidal sinus was a congenital condition associated with one of a series of developmental abnormality such as postanal dimple, dermal sinus, postanal dermoid cysts and even presacral dermoid *(Cardell et al., 1951).*

Several theories were proposed to explain the development of the pilonidal sinus. First it was believed that caudal remnants of the medullary canal persist in the sacrococcygeal region and develop into a pilonidal cyst which in due course ruptures and becomes a sinus *(Newell, 1933).*

Later on, it was beleived that it is a traction dermoid cyst, supported by finding the skin drawn of into the subcutaneous tissues in a cephalad direction to form a sinus as a sequelae of retrogression of the tail and bud *(Kooistra, 1942).*

Although *(Patey and Scarff, 1946)* suggested that pilonidal sinus is an acquired condition caused by hairs penetrating the skin of the natal cleft from outside and setting up a foriegn body granulomatous reaction, but 2 years later, 1948, Gabriel considered it a sequestration dermoid.

Now the acquired theory is more accepted due to:

- Pilonidal sinus rarely manifests before the age of 15 years.

- Hair growth in this area is a secondary sex characteristic, this can explain the appearance of pilonidal sinus in adolescence, caused by buried hair follicles.
- The absence of hair follicles or an epithelial lined cyst cavity in pathologic specimens has also been claimed to weigh against the congenital theory.
- The frequency of recurrence even when excision has been so wide that it is very difficult to believe that any remnants of the epithelium of the postulated original cyst have been left behind.

Five main theories have been adovcated to explain the development of post anal pilonidal sinus:

1. **The preen gland theory:**

In 1931 Harvey B. stone of Baltimore discovered in casual reading that in birds a preen gland is often present as a crypt near the anus, and he threw out the suggestion that possibly pilonidal sinus in man was some form of vestigial preen gland. But he produced no evidence or logical argument in favour of this highly imaginative theory, which need not be further considered.

2. **The medullary canal vestige theory:**

The chief advocates of this hypothesis have been Mallory (1892), Rogers (1933), Gage (1935) and Kooistra (1942). they believe that caudal remnants of the medullary canal persist