A Preliminary Report on Circumcision of Male Infants

Thesis

Submitted to The Faculty of Medicine Ain-Shams University

In Partial Fulfillment of The Requirement for

the Degree of M.Sc.

(General Surgery)

By

Hussein Mahmoud El-Ragheb

Supervised By

Dr. M. Sameh Zaki

Professor of Surgery

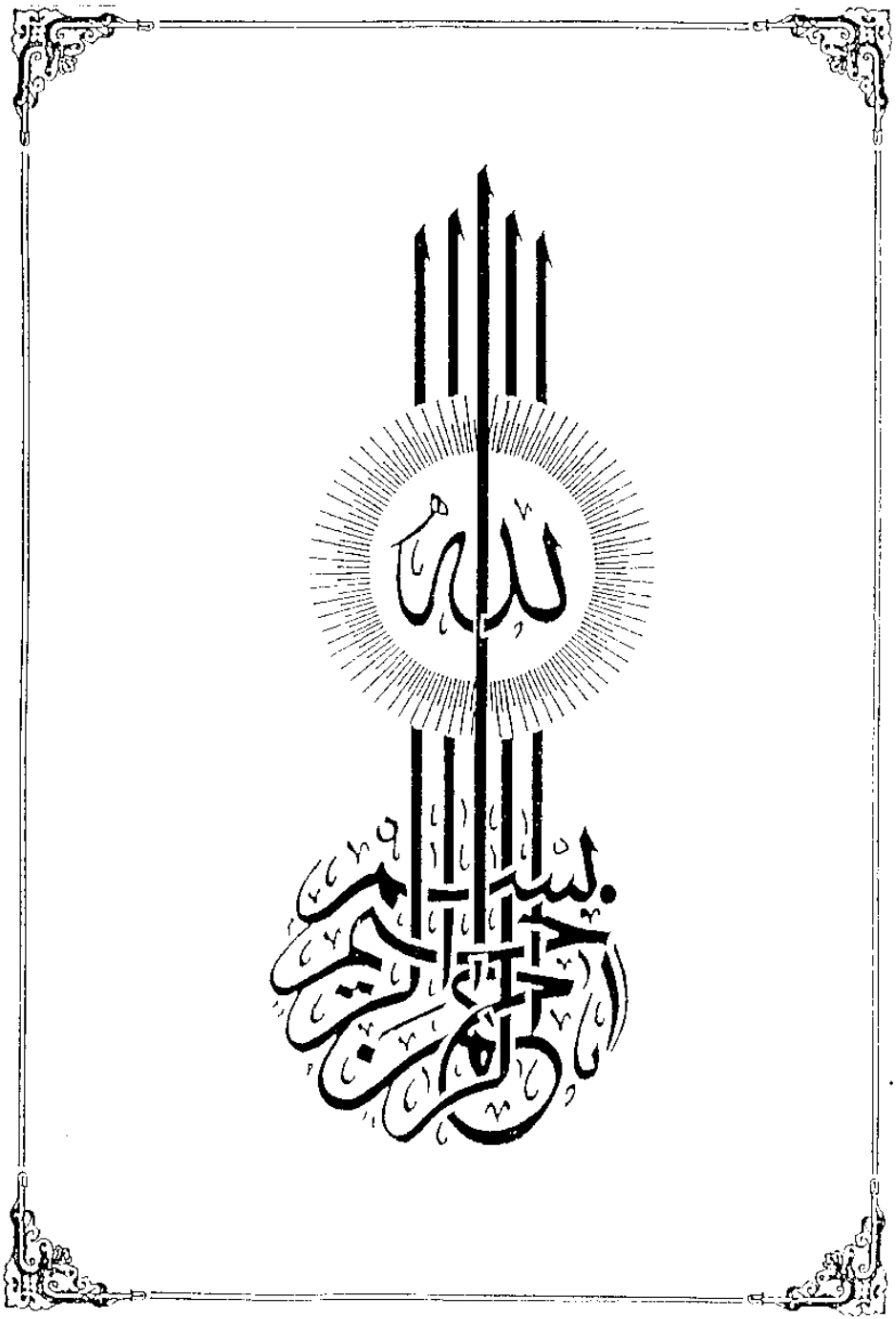
Faculty of Medicine, Ain-Shams University

1980

ACKNOWLEDGE

I am especially grateful to Professor Dr. M. Samah Zaki for reading the proofs and attending with admirable care, patience and skill all stages of preparation the thesis. Without his expert assistance and invaluable efforts it would have been impossible to complete the work so satisfactorily.

I thank all may colleagues, nurses for their cooperation in referring cases and in assisting me in performing this work.



CONTENTS

Page

INTRODUCTION

Circumcision is probably one of the most ancient of Surgical Operations and has been performed more than any other operation, in the past and today. It is undertaken for ritual reasons as well as for medical indications (Shulman, 1963)[30].

There is place here for a detailed discussion of the origins and reasons for this procedure, which is known to have been practised in Egypt nearly six thousand years ago. (Brown, 1972).[5]

It is the most frequently performed surgical procedure on the male child in Egypt, Arab nation , Israel and the United States. In the United States 70 - 80 % of males are circumcised, 24 % in the United Kingdom (Kaplan, 1977)[18]; among the Jewish population of Israel approximately 70 operations are performed each day. (Shulman, 1963)[30].

It is always regarded as minor out-patient procedure, often performed with primitive clamps by barbers, Medical Students and House-officers, without keeping adequate data or follow-up records which are essential to assess the comparative results and complications of the various methods of circumcision e.g. using old and new clamps.

portion of the urogenital sinus. The urogenital folds fuse with each other along the ventral (under) surface of the penis from behind forward to form the penile urethra. As a result, the external uretheral orifice moves progressively toward the glans of the penis.

At the tip of the glans , an ectodermal ingrowth forms a cellular cord called the glandular plate (Fig.2 A). Subsequent splitting of this plate forms a groove on the ventral surface of the glans that is continuous with the uretheral groove in the body of the penis (Fig. 2 E). Closure of the uretheral groove on the glans moves the external urethral orifice to the tip of the glans and joins the two parts of the penile urethra (Fig, 2 C).

During the twelfth week, a fold of skin at the distal margin of the penis grows over the glans to form the prepace or foreskin. The prepuce almost surrounds the glans by 14 weeks (Fig 2 C). For some time, the prepuce is fused to the glans and is usually not retractable at birth. Breakdown of the fused surfaces normally occurs during infancy. The corpora cavernosa penis and the corpus cavernosum urethae (Corpus Spongiosum) arise from the mesenchymal tissue in the phallus. The labioscrotal swellings grow toward each other and fuse to form the scrotum. (Fig. 1 E and G).

Anatomy of the Penis

The penis serves the dual function of incorporating the male urethera and serving as the male organ of copulation. There are three erectile tissue compartments of the penis, the two corpora covernosa situated dorsolaterally and the corpus spongiosum, which invests the urethera and terminate distally in the glans penis. (Christopher 1977)[6] The loose integument of the penis permits elasticity. (Fig. 3)

Each of the three is enclosed in an inelastic fibrous membrane, the tunica albuginea of the corpus (Fig. 4,6). The fibrous sheaths of the corpora are fused together; between the corpora cavernosa the fibrous tissue forms a septum with vertical strands (the septum pectiniforme). The fused fibrous sheaths are attached to the front of the symphysis pubis by triangular sheet of fibrous tissue called the suspensory ligament .(LAST 1973)[20]

The glans penis is covered by the prepuce which is formed of two layers of skin reflected at the neck of the penis behind the corona glandis. The internal layer of the prepuce is confluent along the line of the neck with the skin which covers and adheres firmly to the glans and is continuous with the mucous membrane of the urethera at the external meatal orifice. On the undersurface of the glans passes a small median fold to the deep surface of the prepuce "the franulum". The prepuce is separated from the glans by a potential sac 'the preputial sac' which presents two shallow fossae on either side of the frenulum.

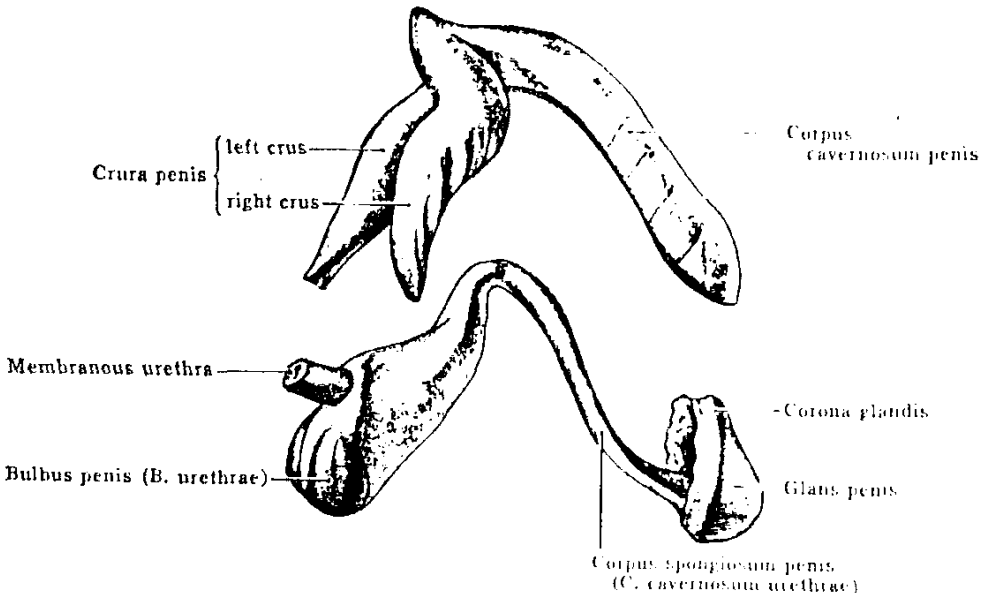
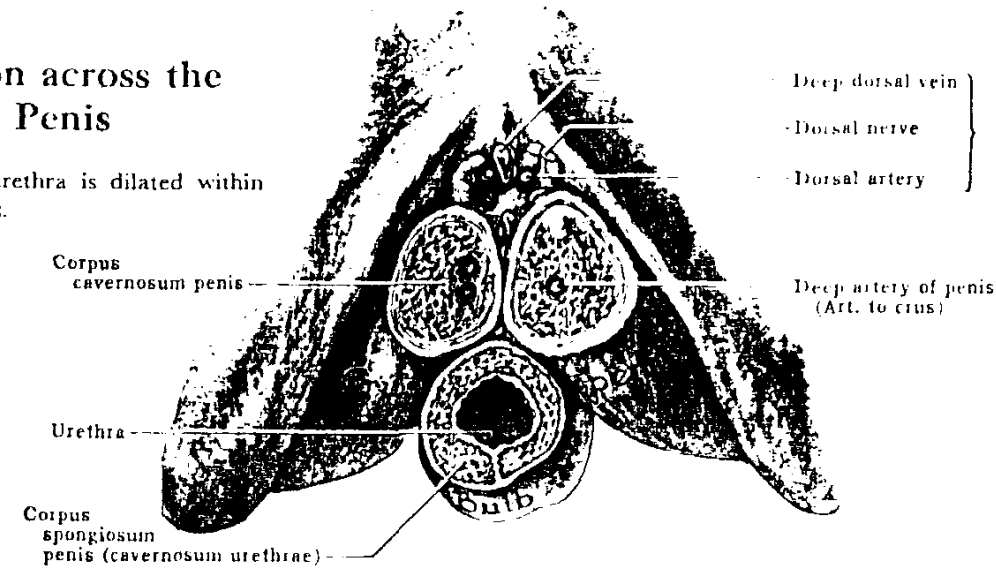


Fig 3 Dissection of the Penis

Fig 4 Section across the Root of the Penis

Observe that the urethra is dilated within the bulb of the penis.



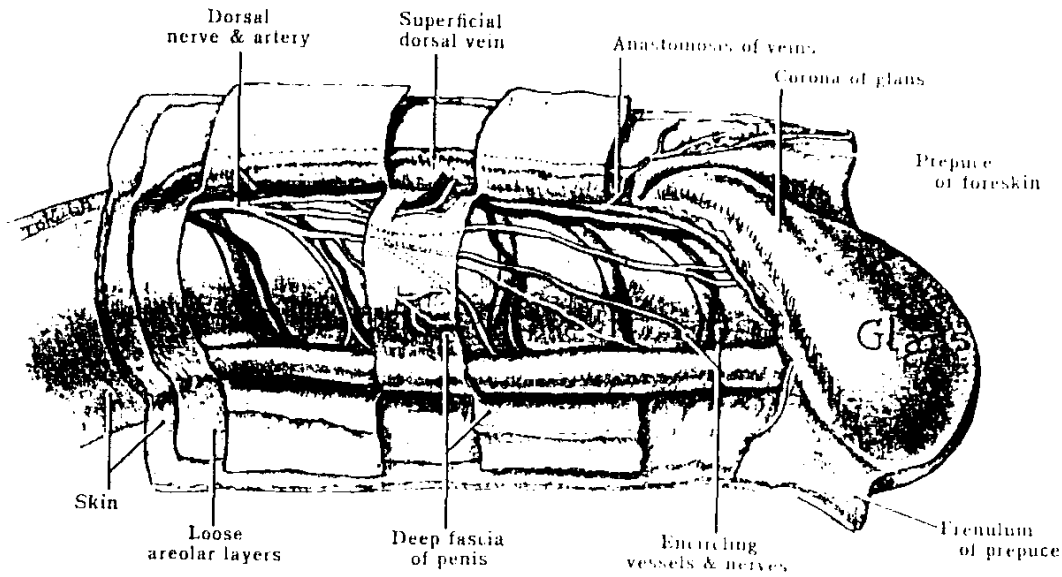
On the corona glandis and on the neck of penis there are numerous small preputial glands which secrete a Sebecious material "the Smegma" which possesses a peculiar odour. (Fig. 5).

Blood supply of the penis : The glans is supplied by terminal branch of the uretheral artry arising a short distance in front of the artry of the bulb from the internal pudendal artery. It pierces the perineal membrane and enters the corpus spongiosum to pass to the glans. The frenal artery supplies the ventral part of the glans and is intimately related to the frenular attachment of the prepuce, The dorsal part of the prepuce is supplied by branches from the dorsal artery of the penis, two on either side of the middle line.

The most constant vein is the beginning of the superficial dorsal vein of the penis in the middle line dorsally. (Gray's Anatomy, 1967)[16].

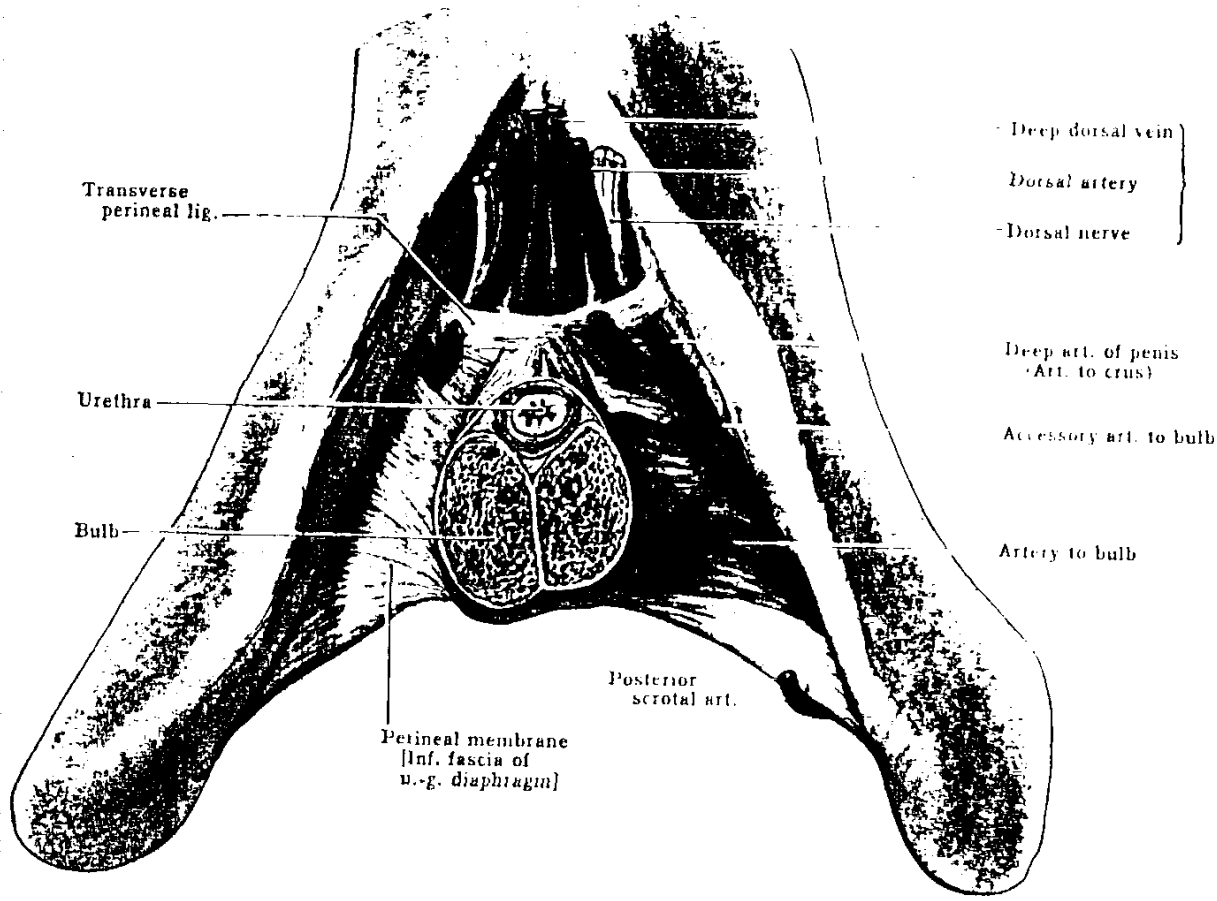
Lymph drainage : The penile urethra drains to the inguinal nodes,both superficial and deep. Lymph vessels from the glans penis are said to run directly to the node (of cloquet) in the femoral canal. (Last, 1973).[20]

The innervation of the glans penis and prepuce is drived from the second third and fourth sacral segments via the dorsal nerve of the penis. One on either side of the middle line lateral to the deep dorsal arteries. (Fig. 6).



Penis, side view

Fig 5



Vessels of the Penis:
The Perineal Membrane

Fig 6

On the glans the cutaneous nerves terminate in certain lamellated corpuscles sensitive to touch but not to pain. The most sensitive are the region of the neck behind the corona and the ventral aspect of the body of the penis.(Fig. 5) "Grants Atlas 1962"[14])

Anatomy of the Prepuce :

The younger child : the prepuce is till in the course of developing at the time of birth, and its separation is usually still incomplete renders the normal prepuce of the newborn still non-retractable. The non-retractability depends upon incomplete separation of the prepuce can be demonstrated by running a probe round the preputial space, gently completing its continuity.

Although in this way the prepuce of nearly every infant can be rended retractable, the procedure necessarily involving the tearing apart of two as yet incompletely separated surface cause some bleeding and open the way to possible infection (Gairdner, 1949).[11)]

Function of the Prepuce :

It is often stated that the prepuce is a vestigial structure devoid of function. However it seems to be no accident when the glans is completely clothed by prepuce, for, deprived of this protection. The glans becomes susceptible to irritation from contact with sodden clothes or napkin.

Meatal ulcer is almost confined to circumcised male infants, and is only occasionaly seen in the uncircumcised child when the prepuce , is lax and the glans consequently exposed (Gairdner 1949).[11)]

History and Origins of Circumcision.

Male circumcision, often associated with analogous sexual mutilation of female such as clitoric circumcision and infibulation is practised over a wide area of the world. Over the near East, tribal Africa, amongest the Moslem peoples of India and South - East Asia and amongst the Australasian. Many of the natives that Columbus found inhabiting the American continent were circumcised. (Gairdner, 1949).[11)]

The earliest Egyptian mummies (2300 B.C.) were circumcised, according to Herodotus " Egyptian and Ethiopian practised circumcision since the beginning of time". The Phenician and Syrians of Palestine admitt they learned this usage from the Egyptians. It passed to Jews ; but the Egyptian practice differed from that of Jews in that in that in Egyptian circumcision was not compulsory and was practised at puberty while the Jews practised it on the 8th day and as compulsory measure.

The Egyptian timing coincided with that of primitive Africans, Aborigenes and Australian tribes who still practise it at puberty, symbolising the passage of a boy to manhood.

The operation was called "Sebet" in ancient Egyptian language, a ward that later passed into the Coptic language. The first indication of the practice of circumcision in the era of Pharaonhs is seen drawing on stone on wall of a Mastaba at Saqqqrah - 6th Dynasty. It represents two scenes of circumcision. On the right the preparation for the operation,

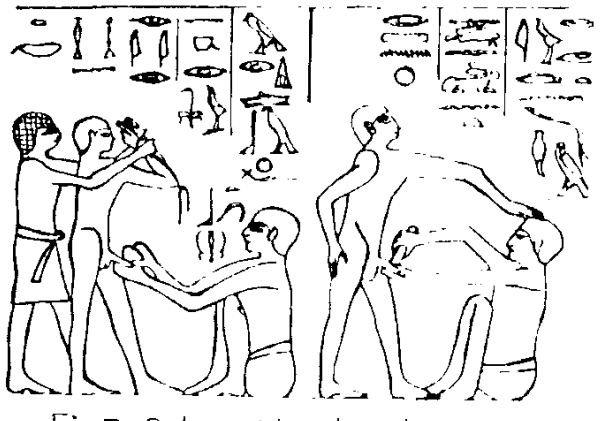


Fig 7 Schematic drawing

On the right the Operator is seen anaesthetising the penis of an adolescent boy standing in front of him. On the left, the boy is held firmly by an assistant. Squatting on the ground, in front of them, the operator is using a knife made of stone or metal to cut the prepuce.

Fig 8 Statue of priest showing circumcision