

Prepuce Advertising

Introduction:

Key Feature: This book provides all pediatric surgery trainees and other professionals involved in the care of childhood surgical disease a hands-on guide to the management of typical common clinical pathologies, as well all possible rare anomalies affecting the prepuce.

This book presents more than 300 full-color illustrations, covering the whole spectrum of congenital and acquired diseases affect the human prepuce, allowing the reader to apply their knowledge to real-life situations and assess their level of expertise.

As the prepuce discarded along the mankind history, and still sacrificed in some communities, it wasn't either demonstrable, repeatable for elaborated studies, little data are available about its normal structure, or the natural deviations affecting it as a congenital anomalies or as an acquired diseases.

Aiming to settle down the argument about genital cutting; this book emerge as an attempt to review the progress made in the understanding of some interesting anatomy, embryology and pathology of this freestanding unique organ; "*The Prepuce*" in male and female.

There is no point in looking for new ideas in old stuff, but this book review our accumulated old knowledge about prepuce, with a plural of newly detectable variations, anomalies and diseases cumulated to the author after dealing with thousands of the prepuces along 40 years of practice.

This illustrative book discusses the normal embryology, anatomy, functions, normal variations and diseases affecting the prepuce. It also explores other rare anomalies and diseases of the prepuce as well as many unreported cases. In addition to the male prepuce, the book also discusses the female prepuce (hood) in order to elucidate some lights in normal and abnormal prepuce. A separate section covers the frenulum and its anomalies.

Generally, late and misdiagnoses of rare disease patients are common and often result in medical, physical and mental burden for the patient, and financial and emotional encumbrance for the patient's family and community. Low level of awareness about rare diseases among physicians is believed to be one of the reasons for late and misdiagnoses of either congenital or acquired diseases which affect prepuce.

A foreskin is a double invagination of skin that covers the glans when the penis is erect and is retracted over the body of the penis with intromission.

The term “prepuce” is the scientific analogue for the demotic word “foreskin”, foreskin represents the outer sheath covering the glans, but prepuce represent the whole structure of the skin and mucous membrane (inner layer). Foreskin is colloquial term while prepuce is anglicized technical term. Prepuce /'pri:pju:s/, or as an adjective, preputial /prɪ'pju:fəl/, refers to two homologous structures of male and female genitals.

Whatever this part of the body will be kept and cared, or it will be removed and discard, we have to confess that the prepuce is exquisitely designed, highly vascularised and innervated with a complex of specialised erogenous structures that are vital to natural and normal sexual function. Anatomy of the prepuce is unique from many aspects; firstly, as the prepuce removed early from a majorities of infants in many communities, so its anatomy is not well known among many physicians. Secondly, the prepuce after delivery is in continuous development till puberty, so its anatomy is diverse at different stages of life, and lastly preputial skin and its muscles had no underneath attachments, it have to contract, retract back to cover the glans through a sequence of sloping muscle fibers. It is astounding that the complex nature of the prepuce was not described until 1991 and this did not appear in the mainstream medical media until 1996.

Genital autonomy is a recent issue emerged to refers to a persons’s being left to make his own informed decision about whether or not to have his penis intact or “natural” and this mainly concerned with the importance of prepuce.

There is no previous distinctive description of the different sections of the prepuce as an unrivalled organ. Herein we will describe separately, and in details, five parts of the prepuce; outer skin (with its three parts: base, body and tip), preputial meatus, inner mucosa, frenulum and balanopreputial sac.

Preputial Distinction

Prepuce is an impressive organ, as a segment of the penis, it has a unique structure from many aspects:

Despite its delicate appearance, the inner surfaces of foreskin are built to withstand frictional trauma along the whole life; hence it is called “frictional mucosa” it also a waterproof structure to withstand damp conditions.

Its outer surface is not well demarcated from the rest of the penile skin (the landmark between the prepuce and penile skin in flaccid penis is sometimes recognised by the coronal ridge projection) (Fig).

Prepuce is a conical structure, with three folds over itself:

- The outer skin folded distally at the preputial meatus, where we can recognize the mucocutaneous junction and frenar band (Fig).
- The inner mucous membrane is folded sagittally at the ventral surface to attach the wings of glans to form the frenulum (Fig).
- The inner mucous membrane attached and incorporated circumferentially to the coronal sulcus, with slight slopping, below the coronal ridge, except at the ventral surface where it is incorporated in the sagittal folds of the frenulum (Fig).

So far there have been a scanty knowledges analyzing the incidence of non-pathological lesions or normal variants on the male external genitalia in general, and nothing was written as regard the prepuce in particular. Subsequently, the number of patients consulted due to the presence of such lesions remains unknown. As most of the penile and preputial variants may be interpreted by the patients as a venereal or sexually transmitted diseases; so such variants may lead to apprehension, which recently known as “venerophobia”

Function of the prepuce: The prepuce covers and protects the glans penis and urinary meatus. In most males, the prepuce protects the sterile urinary tract environment in infancy and maintains the moistness of the mucosal surface of the glans penis throughout life. Several immunological functions of the prepuce that help to protect the body from pathogens have been identified.

Sphincteric action of the preputial orifice functions like a one-way valve, allowing urine to flow out but preventing the entry of infectious contaminants;

Apocrine glands of the inner prepuce, which secrete lysozyme, helps on break down of the cell walls of pathogens (and also acts against HIV).

Sub-preputial moisture lubricates and protects the mucosa of the glans penis.

High vascularity of the prepuce helps to bring phagocytes to fight infection.

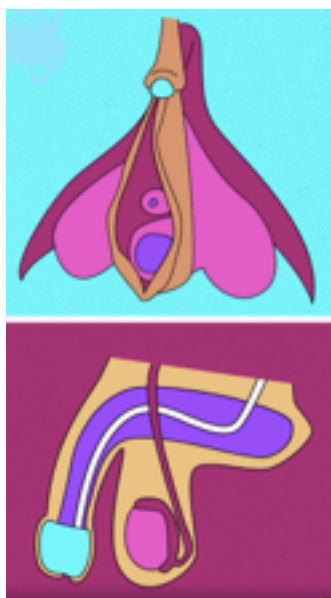
Female prepuce:

Actually the prepuce in female is also formed of three distinct parts: the base, which is in continuity proximally with mons pubis and cover the most proximal part of the clitoris,

preputial body covering the shaft of the clitoris, and the term clitoral hood is reserved for the only double folded ridge at the loose end of the prepuce.

World widely, many women at different age groups, and at variable socioeconomic standers are not fully aware about the morphology, functions and anomalies of different parts of their genitalia. Many physicians, as well many women, even the expert one, are not oriented with the nomenclature of the different parts of the genital organs.

Most of literature are mainly discussing clitoromegaly and few attention were given to preputomegaly, also the subsequent therapeutic measures are directed to reduce the size of the clitoris and few aesthetic surgeons give a concern to remould the large prepuce. Abnormally large prepuce, is not a well known disease, this is in contrary to male with megaloprepuce; which is a recognised entity with different names “Akroposthia”.⁴



Phimosis: Confusion in the precise definition and classification of phimosis results in either over or under estimation of the true incidence of this common condition, most of the practitioners ignoring the fact that normal prepuce is passing through a different stages of maturity from infancy to adulthood, and had a variable ranges of preputial hiatus configuration, with a different degrees of the potential balanopreputial space separation. At the meantime, many researchers are not aware about the difference between phimosis and preputial synechia, describing the normal neonatal synechia as a physiological phimosis with a resultant misleading in the incidence rates of both conditions, which translated into

unnecessary circumcisions in many young boys. The simple fact that the foreskin non retractability should not be a synonymous with phimosis, phimosis is a pathological condition, characterized by hardening, scarring and stenosis of the tip of the foreskin, banning exposure of the glans penis, it could be a congenital anomaly or an acquired pathology; which is commonly inflammatory in nature. The modern concept of phimosis has been the focus of a carefully orchestrated campaign of legitimisation, since its emergence in the nineteenth century.

In some geographic regions a coexistence of a long foreskin and phimosis with a high incidence of penile cancer is evident, however, the presence of long foreskin may be a necessary but not a sufficient condition for cancer development. So some authors supporting a preventive circumcision in patients with long and phimotic foreskins living in high-risk areas. I think cancers not related to long foreskins, and phimosis may be causally different.

Abnormal semblance of the Prepuce:

Aposthia is a congenital complete deficiency of the prepuce without any associated other anomalies, it is a pathological condition which was dealt along man history with many mysterious misunderstanding.

Microposthia is a congenitally short prepuce that not cover the glans penis completely, and usually associated with an abnormally wide preputial hiatus.

Epispasm is an operation that described early to correct a circumcised penis. Some might call it circumcision in reverse. Epispasm on a circumcised penis required a somewhat more difficult technique. Some Jews probably submitted to epispasm because they shared the common Greek and Roman revulsion toward circumcision.

For Greek art portrays the foreskin, often drawn in meticulous detail, as an emblem of male beauty; and children with congenitally short foreskins were sometimes subjected to a treatment, known as epispasm, that was aimed at elongation.

Disproportionate preputial growth may be manifested by several variants and anomalies of the preputial configurations disparate from the normal alignment; such cases are rare and as it has no major affect in the normal function, it may pass unrecognised by the patient or even by the physician. Igloo like prepuce is a rare preputial anomaly with a ventrally directed phimotic orifice in which surgical correction may be warranted, but a simple

circumcision alone would increase the deformity. Studying the various factors involved in its predisposition is essential for successful managing of this condition.

Rare non reported anomalies of the prepuce:

Preputial cutaneous horn

Pilonidal sinus and cyst

Penile Phlebectasia

Preputial Crohn's disease

Preputial Histoplasma

Preputial Porokeratosis

Localized amyloidosis

Pyoderma gangrenosum

Divided or kissing naevus

Preputial Surface Anatomy and Morphology

If prepuce is inspected while the penis uplifted or erected, it is commonly conical in shape and formed of five subsections:

1. Outer skin:
 - Base
 - Body
 - Free tip
2. Preputial Meatus
3. Inner mucosa:
 - Smooth mucosa
 - Ridged band
4. Frenulum
5. Preputial sac