Female Sexual Function and Dysfunction

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Foreword

I am proud and pleased to present the first edition of this book entitled *Female Sexual Dysfunctions*. The goal of this book is to disseminate the state-of-the-art, scientific, evidence-based information on the study, diagnosis, and treatment of women's sexual health concerns.

An Eastern myth tells a story about blind men and an elephant, in which a group of blind men touch an elephant to learn about it. Each one feels a different part, but only one part. They then compare notes and realize that they are in complete disagreement. Only when they stop talking and start listening, collaborating, and comparing notes are they able to see the whole elephant. The story teaches us that although one's subjective experience is true, it might not be the complete truth. So is female sexual dysfunction (FSD) the sexological elephant? The debate is not new, but opinions remain polarized. A crucial paradigm for understanding the etiology and treatment of sexual problems is to view sexuality and sexual function and dysfunction in a biopsychosocial context, meaning that we must recognize that different factors influence a woman's sexual life to get the full picture of her sexuality. The critical voices argue against the existence of female sexual dysfunctions, making accusations of disease-mongering and suggesting that the pharmaceutical industry are medicalizing female sexuality and creating a problem that does not exist. However, their opponents argue that real feminism is to give women with distressingly low sexual desire an opportunity to receive medical treatment just as men are able to do.

While the debate is going on, 30–50 % of women report low desire and 12 % report that the problem is distressing. Furthermore, the prevalence of low desire increases with age, but the level of distress decreases. For years, only one pharmacotherapeutic treatment—testosterone therapy—has been available for low sexual desire in surgically postmenopausal women. Female sexual dysfunctions have traditionally been treated with sex therapy, relationship therapy, and other psychotherapeutic approaches, which are often good treatments but are not always successful. Pharmacological treatments are, therefore, justified—especially if the underlying problem is biological. Very little research has investigated the effect of psychotherapeutic approaches, and discussions of what constitutes good end points when evaluating the effect of treatment are lacking. Is the aim to increase sexual activity, to achieve a subjective feeling of increased desire or empowerment, or to gain a deeper understanding of what promotes and prevents a good sex life? Many of these soft end points might be important for the woman but are difficult to measure in a clinical trial.

Could we imagine having the same discussion about treating male low desire with testosterone or using phosphodiesterase type 5 (PDE5) inhibitors for erectile dysfunction? What is the difference? Clinical experience with testosterone has shown us that selected women clearly benefit from medical treatment and that some women benefit from flibanserin therapy; however, the existence of a distinct placebo effect in clinical trials strongly indicates the additional importance of psychological factors. However, despite these data, some people argue that women will feel under pressure to seek unwanted medical treatment for their sexual problem, with the implication that men can be trusted to make a rational decision regarding the risk versus reward of receiving treatment, whereas women cannot. Thus, even in the twenty first century, we still approach women's and men's sexuality differently. These disparate approaches to male and female sexuality are despite substantial changes in the attitude of Western culture towards female sexuality over the past 150 years. From women's sexuality being considered something that did not exist or was wrong and immoral if it was expressed, through to the new attitudes that arose during the 1960s to 1970s when women were considered to have the same right to orgasm as men, men and women were claimed to be sexually equal, and women could control pregnancy and their own sexuality. Today's situation is an increased focus on sexual desire as something expected to be present throughout life, and the concept that sexuality is one of the cornerstones in keeping couples together. The concepts of and attitudes to female sexuality have continuously evolved, much more so than our attitudes towards men's sexuality, with men being seen as having a strong, stable, and often biologically driven sexuality that is not doubted. Furthermore, the participants are arguing like the blind men from the myth: depending on what specialty, experience, theoretical tradition, and experience we come from, our concepts of female sexuality and dysfunction are disparate, and we interpret the female sexual dysfunction elephant differently. Thus, we miss an important opportunity to see the whole elephant and address all aspects of female sexuality. Such challenges, especially when combined with the disagreement between different academic and clinical opinion leaders—all of whom claim to represent women—are harmful, as we miss the opportunity to embrace and understand all aspects of female sexuality, how it is formed and expressed, how it functions, what is important for the individual woman, and how we can best help women who seek help for a better sexual life. Once again, as we fail to work together, we are repeating the mistakes of the blind men. However, unlike an elephant, female sexual dysfunction is not a well-defined and well-delineated phenomenon, and it is experienced differently from one woman to another; in fact each woman perceives herself and her situation individually and should be consulted and treated based on her needs. To provide women with the best possible care, we need more research into all aspects of female sexuality and treatment options, and following the example of the blind men, we must finally start listening, collaborating, and comparing notes.

Vincenzo Mirone
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Sociocultural Considerations

1

Donata Villari

Ἔρος δ' ἐτίναξέ μοι
φρένας, ὡς ἄνεμος κὰτ ὄρος δρύσιν ἐμπέτων.
Saffo – Ereso – 630 avanti Cristo – Leucade 570 avanti Cristo

Eros shakes my mind
like a mountain wind falling on oak trees

Paul Julius Moebius –1835–1907
Über den phisiologische Schwachsinn des Weibes 1900

Nature holds the maiden in the obscure vision of her instincts. Her repugnance for men, the repulsion that inspires her sensuality, appears to the consciousness of the virgin as absolute, enduring feelings … The better a girl is, the more firmly she is convinced that she has no desire… and that her longings should be turned towards the ideal.

"The Mental Inferiority of Woman," 1900, preface to the third edition

. .. yes and how he kissed me under the Moorish wall and I thought well as well him as another and then I asked him with my eyes to ask again yes and then he asked me would I yes to say yes my mountain flower and first I put my arms around him yes and drew him down to me so he could feel my breasts all perfume yes and his heart was going like mad and yes I said yes I will Yes.

from Molly Bloom's monologue in James Joyce, Ulysses – Paris, 1922

Since the 1970s the term "sexual medicine" has become common usage [1]. Interestingly and appropriately enough, the introduction of the 2012 *ESSM Syllabus of Sexual Medicine* [2] stresses that the use of the term "sexual", understood, however, simply as an adjective referred to sexual or gender identity, was borrowed from studies of botanical taxonomy at the beginning of the nineteenth century [3]. And even after being transferred to the context of a discipline that analyzes human sexuality, the term was at first employed exclusively in the study of reproduction.

The term "sexology" appeared for the first time in Elizabeth Osgood Goodrich Willard's 1867 work, *Sexology as the Philosophy of Life*: *Implying Social*

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Organization and Government [4]. And the mathematician Karl Pearson, one of the founding fathers of modern statistics and a convinced believer in eugenics, in the 1888 inaugural lecture of the Men and Women's Club, which he had founded, entitled "The Woman's Question," stressed the need for a "real science of sexology" [5].

The Italian Paolo Mantegazza (1831–1910), physiologist and pathologist, a visionary writer who was among the first to spread Darwin's theories in Italy, published *La fisiologia dell'amore* (*The Physiology of Love*) (1873), *L'Igiene dell'amore* (The Hygiene of Love) (1877), *La fisiologia del piacere* (*The Physiology of Pleasure*) (1880), and *La fisiologia della donna* (*The Physiology of Woman*) (1893). He dedicated himself to important studies in neurophysiology and pharmacology based on animal models, treating topics absolutely in the vanguard for his time, among which were female sexuality, male and female infertility, masturbation, erectile dysfunction, and vaginismus [6].

But it was the dermatologist Iwan Bloch in his 1907 work, *Das Sexualleben unserer Zeit in seinen Beziehungen zur modernen Kultur* [7], who was the first to stress the importance of a multidisciplinary approach for those who intend to do in-depth studies of the "life of love," by integrating knowledge from diverse fields such as biology, anthropology, philosophy, psychology, sociology, ethnology, and medicine, a concept that is completely shared nowadays.

At the start of the 1900s, this "new science" seemed to be something chaotic and vague. It was in this field that Freud came onto the scene as precursor and interpreter of his times. Still, his theory of female sexuality was strongly conditioned by the ethical principles and the customs of the society of his day, despite the transgressive and groundbreaking questions his theories introduced (we need only think here of childhood sexuality).

Freud has no organic theoretical work specifically dedicated to the female psyche in the sexual sphere; what exist are mainly clinical cases or fragmentary theories. By his own admission, the origin and development of female sexuality remained an inextricable enigma, which led him, despite his charisma, to collaborate with contemporary women analysts [8].

While the myth of Oedipus remains a cornerstone in the psychosexual history of the male individual, it is attributed to the woman in its "reciprocal" form (reverse Oedipus), though with various interpretative complications and a marked asymmetry that led Freud himself to state that at the very best in the female sex "Oedipus" can never be completely overcome. Freud held that the penile substitute, the clitoris, was initially invested with strong focalization and very intense sensations but that afterward, in the so-called genital phase, these sensations were transferred to the vagina, and this represented the achievement of psychosexual maturity. In this way the clitoris was disinvested, losing its importance for orgasm, to the point that continued clitoral orgasm was interpreted as evidence of a neurosis, synonymous with fixations and regression to the pregenital phase.

Recent psychophysiological studies disclaim Freud's theory of female sexuality. Indeed, current analytical interpretation has reappraised and reformulated his hypotheses, with the consequence that the opposition between clitoral and vaginal orgasm is no longer accepted.

As we have already noted, an important contribution to the study of female psychosexual development has been given by the work of the first women analysts, the

Danish Lampl-de Groot (1895–1987) and the American Ruth Mack Brunswick (1897–1946), though in a perspective that has since been accused of "female misogyny." They went more deeply into the questions of the passive-active sex role, the conflictual mother-daughter relationship, and female castration in the process of working through the negative Oedipus [9]. Helene Deutsch (1884–1982) adopted the Freudian theory of the natural masochism of women [10], while Karen Horney (1885–1952), whose convictions were influenced by sociology and anthropology, countered with an explicative model of female development strongly influenced by social and cultural elements [11].

In 1974 Luce Irigaray identified the foundation of female sexual identity in the mother-daughter relationship [12]. This first love is banned in the patriarchal order, which relegates it to an aphasic function of identification. Irigaray went on to demand women's right to diversity, to self-love and the love of other women, without effacing themselves in the competition to win the sexual favors of men [13].

Going back to the father of the psychoanalytic approach to sexuality, in the end Freud proposed two types of femininity that are possible to find in adult women: one is altruistic, maternal, masochistic, and receptive, while the other is narcissistic, seductive, autoerotic, and not ready to love authentically – two contrasting and practically incompatible prototypes.

This dichotomy of femininity, which in a certain sense creates a gap between the generative-maternal and the erotic roles, underlies all the subsequent great battles for emancipation in industrialized countries in the twentieth century. However, in the end it has proven difficult to achieve a widespread sentiment of "interior" liberty, free from the age-old internalized identity/role models (mother/wife). Doubtlessly there has been progress in women's "rights" and in safeguarding their health and their maternity. But at the same time, the difficult climb to achieve equal opportunities in pay and positions in important social roles is still steep and uneven [14].

What is evident is that the disciplines that study sexual behavior, both male and female, have undergone a revolution in their scientific and cultural approaches in recent decades and that this is especially true as regards female sexual dysfunction (FSD). Nowadays one concept stands out clearly – female sexuality is complicated. It cannot be totally closed within a context of anatomical and physiological districts; rather, it has to be understood and contextualized in all its manifestations, which involve the biological, psychological, and sociocultural spheres. All of these have to be set in a scenario that does not underestimate economic, racial, and religious aspects, as well as differing access to resources and the presence in the world of conflicts and wars that unfortunately lead to systematic sexual violence. Indeed, even today over 135 million women worldwide have had to undergo the ritual procedure of infibulation.

The borderline between what was once considered "anomalous" and what is felt to be "normal" today is continually shifting. This is reflected in the change over the years of the system of classification of FSD that has partly revolutionized its nosography [15]. Since 1952, in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders (DSM*), many versions have been published, characterized by successive updating [16–21]. The "Consensus Development Conference on Female Sexual Dysfunction," organized by the American Foundation for Urological Disease in 1998 and followed by the one of the same name in 2003 [22–24], while maintaining some continuity with

the criteria of the DSM-IV-TR 2000 [21] and of the ICD-10 1992 [25], has introduced important novelties [22–24].

The receptive/motivational desire model introduced by Deborah Bateson in 2001, characterized by its *circularity*, repositions sexual response as the result of the modulation of interactions between the brain and the genital area through positive or negative feedback [23, 24]. The concept of "personal distress" is also introduced. By this is meant the emotional repercussions in terms of feelings of frustration felt by women due to and in relation to a sexual dysfunction. This concept represents an attempt to get beyond certain critical aspects of the previous classifications. The most important of these are the following:

- The description of male and female sexual dysfunctions as specular phenomena
- The representation of female arousal as a series of phases following a "linear model" that does not really fit it [26]
- The problematic distinction between the phases of desire and arousal
- The neglect of emotional and interpersonal aspects and of prior and current sexual experiences
- The exclusive reference to a heterosexual orientation in women living in a long-term couple relationship

Perhaps even today no effort at the classification of FSDs and the distress they cause fully encompasses such a highly complex issue. What is certain is that any future changes in definition will have to be supported by evidence-based research, though the basic domains that have already been identified (desire, arousal, orgasm, and pain) will undoubtedly continue to be cardinal fields of reference [27].

The role of sexual health as an essential prerequisite for a person's well-being, happiness, and development is universally recognized today [28, 29]. But sexual health, far beyond simply meaning the absence of disease (which, however, in many parts of the world is still a goal), requires universal awareness and promotion.

We are light-years away from the times when for primitive man the moon was the visible representation of the woman, silent and mysterious symbol of the genuine receptive essence of the feminine, in antithetical contrast with the active, bright solar essence that represented man [30]. In our day, men and women have to discover and experience a repositioning of their roles, including their sexual roles, from a perspective of mutual respect and sharing. What is more, a reconsideration of possible gender orientations also involving the sexual sphere is necessary.

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Anatomical and Physiological Description of Women's Sexuality

2

Serena Maruccia and Angela Maurizi

The female genitalia can be subdivided into the *internal genitalia* (vagina, cervix, uterus, fallopian tubes, and ovaries) and *external genitalia* (vulva), including the mons pubis, clitoris, labia majora and minora, which are the structures surrounding the urogenital cleft (Figs. 2.1 and 2.2). In anatomy textbooks there is a separation between the embryological development of the internal and external genital organs in males and females. It is important to know this because it is

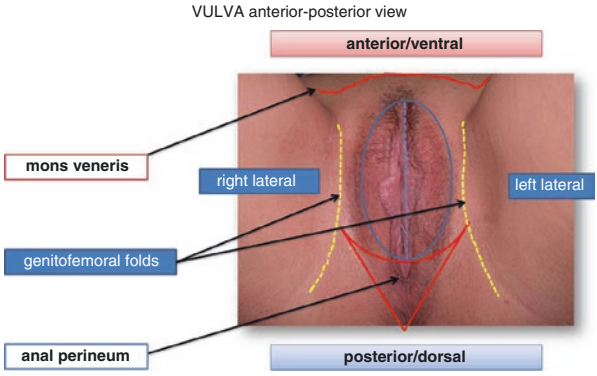

Fig. 2.1 Borders include posteriorly the *anal perineum*, laterally the medial side of the thighs, limited by *genitofemoral folds* (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

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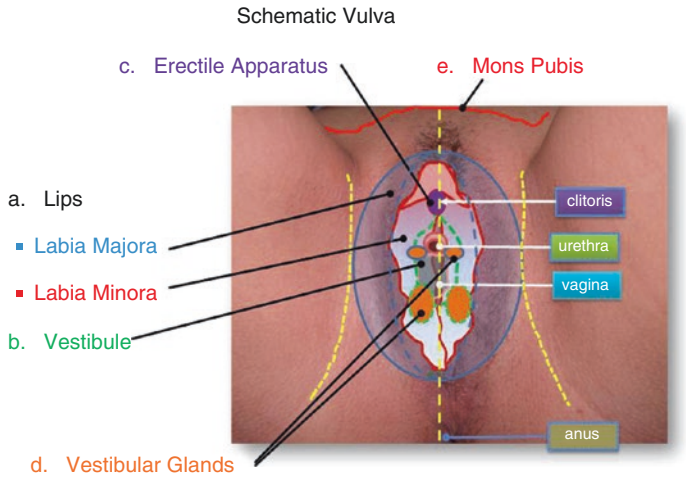

Fig. 2.2 Schematic representation of the Vulva (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

related to the functions of these organs, that are: the internal genitals have a reproductive function, while the external ones have the function of giving pleasure. This chapter describes the structures directly involved in physiological sexual response.

2.1 The Anatomy of the Organs

2.1.1 Clitoris

The clitoris is an external organ and has three erectile tissue parts, most of which lie beneath the skin: the glans, the body, and the crura; in the free part of the organ, it is composed of the body and the glans located inside of the prepuce, which is formed by the labia minora (Fig. 2.3). The size of the clitoris varies considerably. Internally, it is a triplanar complex of erectile tissue comprising a midline shaft some 20 cm long and 1–2 cm wide that divides internally into a pair of crura some 5–9 cm in length. The erectile tissue consists of trabecular smooth muscle and collagen connective tissue encircled by a thin fibrous capsule surrounded by large nerve trunks. Externally, the shaft is covered by the prepuce and is capped by a glans some 20 mm in length and 30 mm wide. Linked to the structure are two vestibular bulbs on either side of the vaginal introitus, closely applied to the urethra. The erectile compartments consist of the clitoris and the clitoral bulbs. The function of the bulbs is unclear; one speculation is that, when filled with blood, they support the vaginal wall during the thrusting of coition (Fig. 2.4).

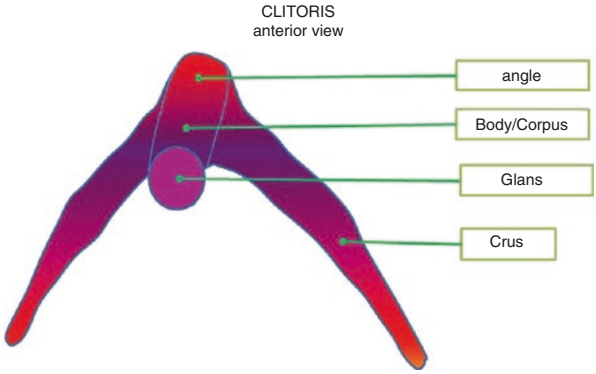

Fig. 2.3 Two portions can be distinguished: a *hidden portion*, which includes the crus and the posterior part of the body (BASE), and a *free portion*, formed by the elbow, the rod and the glans (APEX) (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

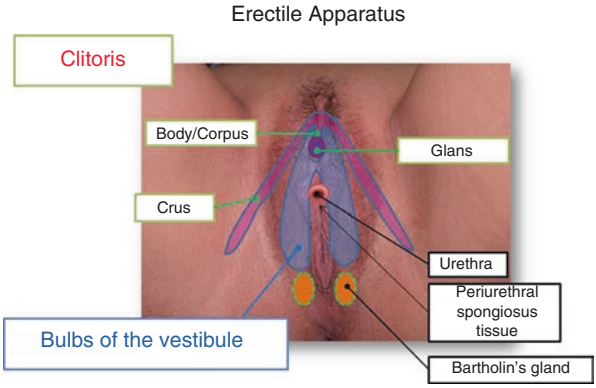

Fig. 2.4 *Erectile apparatus* comprises a median organ, the *clitoris*, and two lateral organs, the *bulbs of the vestibule* (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

2.1.2 Vagina

The vagina is a muscular tube leading from the external genitals to the cervix of the uterus.

In the unaroused state, the vagina is a potential space with its anterior and posterior walls collapsed and resting together, but they do not adhere because the walls are covered with a thin film of fluid. The average length of the vagina is 7–8 cm, and the width is 24–25 mm; this width is not uniform over the whole extension of the duct: it widens as it approaches the fornix. The vagina is located behind the bladder and the urethra, in front of the rectum, and above the vulva, into which it opens. The layered structure of the vagina consists of the luminal stratified squamous epithelium; a lamina propria layer containing connective tissue, blood vessels, nerves and receptors, collagen, and elastin fibers; and further inside a layer of smooth muscle. The vascolaritation of the vagina, stem mostly from the vaginal artery, branch of the internal iliac artery. The vaginal vessels are richly innervated by adrenergic, cholinergic, and vipergic nerves.

2.1.3 The Urogenital Triangle and Pelvic Floor Muscles

The pelvic floor muscles have the same composition in both men and women: the pubococcygeus and coccygeus muscles form the muscular diaphragm, which supports the pelvic viscera and opposes the downward thrust produced by an increase in intra-abdominal pressure.

2.1.4 Cervix

The cervix is shaped like a cylinder slightly swollen in its middle part and somewhat flattened in the direction from front to back. Its central canal is 3 mm in diameter and 2–3 cm in length and is lined with a greatly folded epithelium of columnar cells creating crypts that look like and are often mistaken for glands. The cells secrete mucus, which varies depending on the stages of the cycle, creating an optimal or hostile environment for sperm movement and survival.

2.1.5 Arterial Supply

Women's genitalia have a rich arterial blood supply. The labia are supplied from the inferior perineal and posterior labial branches of the internal pudendal artery as well as from superficial branches of the femoral artery. The clitoris is supplied by the iliohypogastric pudendal arterial bed. The middle part of the vagina is supplied by the vaginal branches of the uterine artery and the hypogastric artery; the distal part of the vagina is supplied by the middle hemorrhoidal and clitoral arteries.

2.2 Anatomy of the Distal Vagina

2.2.1 Vaginal Introitus

The distal vagina varies in appearance with age. The introitus is elastic in nature, as its mucosa is capable of permitting the release of a baby's head without tearing. The skin of the vulva is a hairless, moist and squamous epithelium (Fig. 2.5).

2.2.2 Hymen

The hymen is a thin, incomplete membrane of connective tissue, located at the edge of the vaginal canal and the vestibule. It is easily ruptured during the first

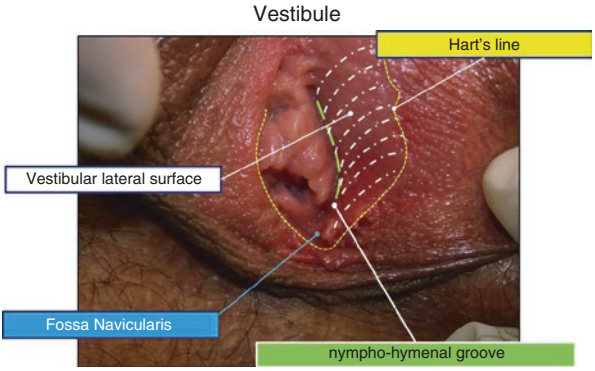

Fig. 2.5 The vulval *Vestibule* is the oval area, a cavity, between the labia minora. Labia minora form the lateral edges, extending from the upper hymenal ring and the lower Hart's line on each small lip. The vaginal opening is also more correctly called *introitus*, since the vagina is usually collapsed, with the opening closed. The introitus may be partly covered by a membranous septum, the hymen (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

sexual intercourse or regular coitus. Also routine use of tampons can cause it to rupture. So the hymen is reduced to a series of small irregular deviations around the vaginal opening termed hymenal lobules (flaps appearing after early intercourse) or carunculae myrtiformes (later less evident remains in parous introitus). Sometimes the rupture may be unnoticeable because it is minor. Occasionally the hymen may be so rigid as to cause sexual discomfort. In other rare cases, it may completely cover the vaginal opening and surgery is needed to allow menstruation. Morphological variations are very frequent (annular, semilunar, lipped, septate, cribriform, papillary, etc.)

The annular hymen has the shape of a diaphragm perforated by a central or eccentric hole. The semilunar hymen has a crescent shape which is concave anteriorly. It covers half, two-thirds, or three-quarters of the vaginal opening. The lipped or bi-lipped hymen has one or two side parts (lips), separated by a median longitudinal fissure (Fig. 2.6a-f).

2.2.3 Mons Pubis and Suspensory Ligaments

The mons pubis is a hair covered area composed of subcutaneous fat and fascial support to the clitoris and urethra. The variable shape of this area provides a sensitive anatomical marker of adult female androgenization.

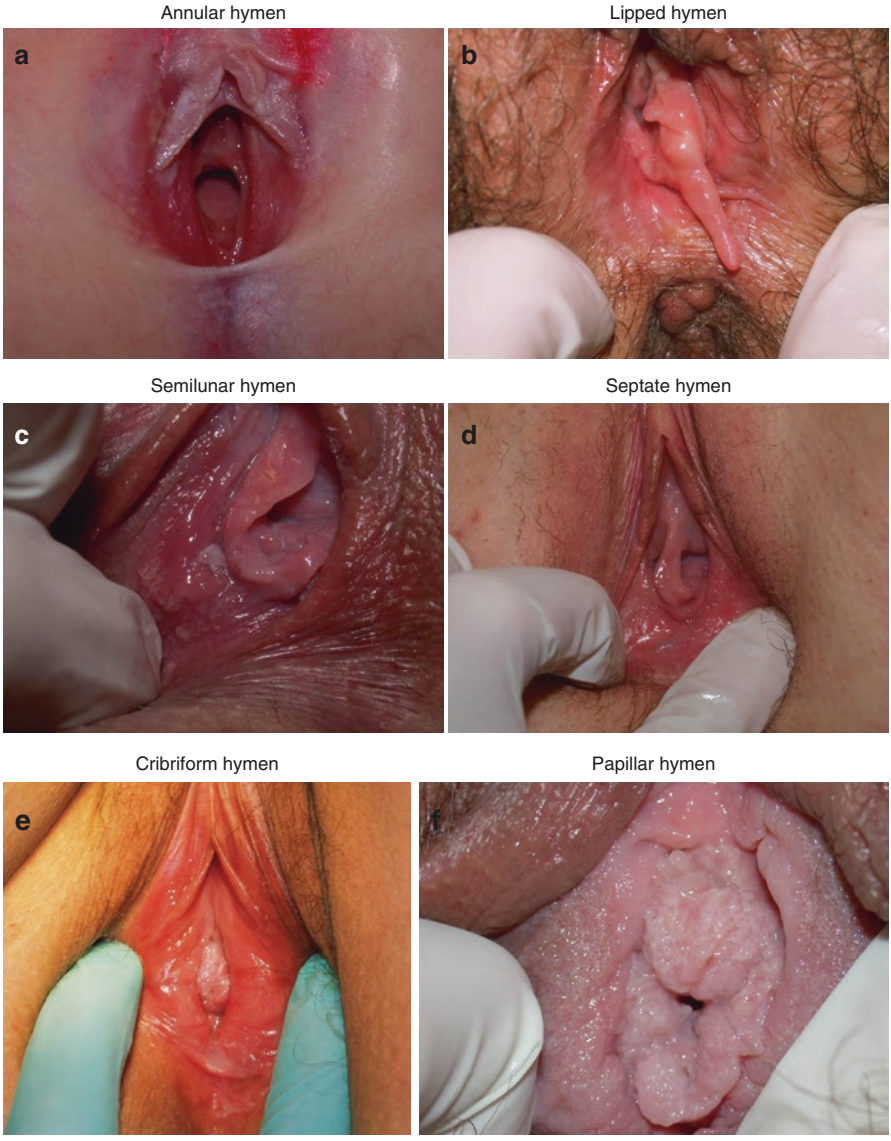

Fig. 2.6 Morpological variations (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

2.2.4 Bulbs of the Vestibule

These are a double structure of erectile tissue that participate in the formation of the clitoris. The anterior edge of each bulb is combined with that of the other, under the knee of the clitoris. A venous network between bulbs and clitoris is present. The

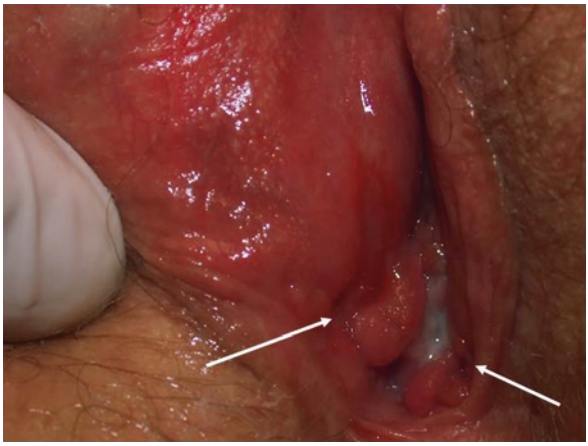

Fig. 2.7 Bartholin's glands (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

posterior edge is in contact with Bartholin's glands. Each bulb is ovoid and lies in the superficial perineal pouch, attached to the urogenital diaphragm and covered by the bulbocavernosus muscles, which are adjacent to the lateral wall of the vagina and embrace it.

2.2.5 Vestibule and the Root of the Clitoris

The vestibule comprises the area of hairless skin that extends between the medial aspect of the two labia minus, and from the frenulum of the glans anteriorly to the introitus posteriorly. Underlying the vestibule is the root of the clitoris. This zone is highly responsive to direct stimulation.

2.2.6 Vestibular Glands

They include the greater vestibular glands (Bartholin's glands), minor vestibular glands, and paraurethral Skene's glands.

Bartholin's glands are tubuloalveolar glands producing a stringy, viscous, colorless liquid. They are situated deeply in the posterior part of the big lips, just inferior to the bulbocavernosus muscles. The glands are included between the skin with the underlying Colles' fascia (fascia lata) and the inferior fascia of the urogenital diaphragm (Fig. 2.7). Excretory ducts, 1–2 cm long, open within the nympho-hymenal groove and are localized to the 5 and 7 o'clock (Fig. 2.8). Minor vestibular glands are present in more than half of the women and are located around the fourchette (it is the skin of the midline of the posterior margin of the vaginal introitus). Their number varies from 2 to 10 in each subject and the structure is similar to that of the greater glands.

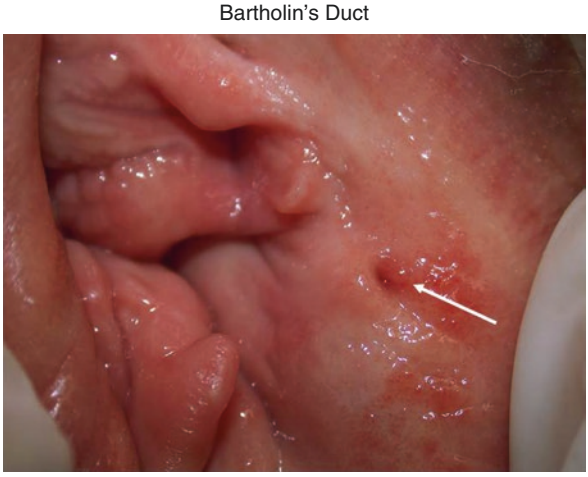

Fig. 2.8 Excretory ducts (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

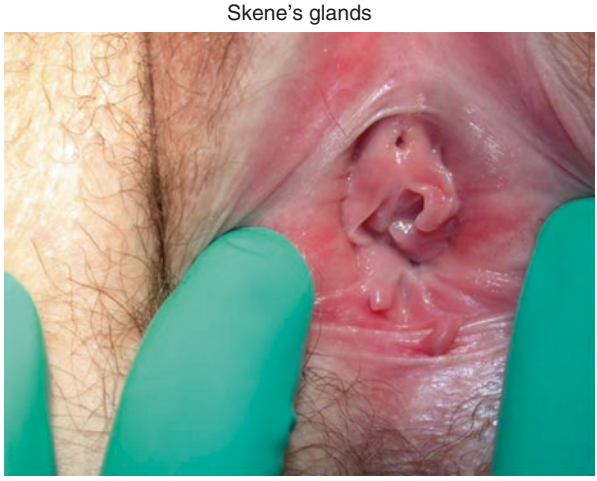

Fig. 2.9 *Paraurethral Skene's glands the so called "female prostate"*, derived from endodermic eversions of the urethra (Courtesy of Dr. Cosimo Oliva, Chapter 15, Atlas of Vulvar Dermatosis and Dermatitis)

Paraurethral Skene's glands open near lower half of the urethral external meatus (Fig. 2.9). They are greater than the periurethral glands.

2.2.7 Labia Minora

The labia minora, or nymphs are, at rest, approximated together; in males they correspond to the ventral wall of the cavernosa urethra and of the corpus spongiosum of the urethra. Anteriorly, the labia minora divide into lateral and medial parts. The lateral parts extend form the prepuce of the clitoris. The medial parts unite on the undersurface of the clitoris to form its frenulum. Posteriorly,