

The Abdominal and Pelvic Brain

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CHAPTER XXXX.

SYMPATHETIC RELATION OF THE GENITALIA TO THE OLFACTORY ORGANS.

One's rainbow of desires changes color with the passing years.

*It is when you come close to a man in conversation that you discover what his real abilities are. -
Samuel Johnson*

It is a curious fact that even laymen have for ages noted that the organ of smell is closely related to the generative organs, but it is very recently that specialists (gynecologists and rhinologists) are putting together the connected story. The relation of the olfactory organ and nasal mucous membrane with the genitals are by way of the sympathetic. The anatomic path of travel from the nasal mucous membrane to the genitals is through the fifth cranial nerve, or trigeminus which is supremely the ganglionic cranial nerve. It is the type of mixed nerves. It has eight ganglia situated on its branches. It also sends a large branch to the mucous membrane of the nose - the nasal nerve. This will at once explain its wide influence in reflection or disease, because of its extensive influence over the caliber of adjacent blood and lymph vessels and the extensive periphery in the nasal mucosa, allowing opportunity for numerous reflexes.

Let us examine for a moment the ganglia of the trigeminus (trifacial or fifth cranial nerve - the ganglionic nerve of the brain). A significant statement may precede the short description, by saying that one of the chief offices of a ganglion is to demedullate nerves. 1, We may note the Gasserian ganglion of the fifth cranial nerve, situated in a depression in the apex of the petrous portion of the temporal bone. The ganglion is as large as the end of the little finger. The ganglionic nature of this swelling was perceived by Raimund Balthasar Hirsch, a Vienna anatomist, in 1765, who christened it the "Ganglion Gasserii" in honor of his teacher, Gasserius, who in 1779 was "Privat Docent" in anatomy under Prof. Joseph Jans, in Vienna. Since Du Bois-Remond announced from personal experience that he thought facial neuralgia was due to spasmodic contraction of the blood vessels controlled by the sympathetic, surgeons have attempted to cure facial neuralgia by destruction of Gasser's ganglion. This is at least a recognition of the sympathetic nature of the Gasserian ganglion, and its consequent influence over the caliber of the blood vessels.

The Gasserian ganglion has close and intimate connection with the sympathetic nerves. The blood vessels alone which are necessary to supply the Gasserian ganglion would produce a close and intimate relation between the sympathetic and trifacial. The trigeminus shows a very intimate and extensive connection with the tonsils, the sebaceous glands of the face and genitals. This is seen at puberty of both boys and girls (facial acne), and in the menopause. The changes in voice of boys at puberty, and the changes of voice of women at the monthly, may be easily worked out anatomically, by dissecting out the connection between the superior cervical ganglion and the pneumogastric and glosso-pharyngeal. Also the sphenopalatine sends branches to the tonsils in the descending palatine nerves. One may find from three to five branches of nerves passing from the superior cervical ganglion to the glosso-pharyngeal and pneumogastric nerves. During menstruation the vocal cords are congested and hence the hoarse, husky voice; and a similar but permanent physiological process of congestion and growth occurs in the boy at puberty. Hence the close and intimate relations of the vocal cords (voice) and nasal mucosa (smell) and reflex action with the genitals, have a distinct, concrete, anatomical explanation. Besides, the larynx is supplied

by the sympathetic branches which accompany the superior and inferior recurrent laryngeal nerves.

2. The ophthalmic, lenticular or ciliary ganglion is a pinhead sized ganglion situated in the orbit. It is closely connected by roots with the nasal branch of the fifth nerve, i. e., has relations with the nasal mucosa, by a sympathetic branch from the cavernous plexus. It is also connected with the third cranial. This second ganglion has intimate connections with the nasal mucosa. Joseph Guiscard Duvernoy (1648-1730), a French anatomist, discovered this ganglion.

3. The sphenopalatine, or Meckel's ganglion, situated in the sphenopalatine fossa and on the superior maxillary branch of the trifacial, is a large mass of nerve cells. It is intimately connected with the nasal mucosa by the descending palatine nerves. The sphenopalatine ganglion was discovered and described by Johann Friedrich Meckel (1717-1774), a celebrated German anatomist. Like all the other ganglia of the fifth cranial nerve, it possesses motor, sensory and sympathetic roots. It sends a considerable nerve supply to the tonsils. Hence we again observe that this ganglion shares in distributing nerves to the nasal mucosa and the region of the tonsils. But the premise of our argument is that the fifth nerve, being studded by eight sympathetic ganglia, is intimately and closely connected, anatomically and functionally, with the genitals. Therefore what affects the fifth nerve will affect the genitals, and vice versa.

4. The optic or Arnold's ganglion is located just below the foramen ovale, on the inferior maxillary branch of the trifacial. Its sympathetic branches are derived from the sympathetic plexuses which surround the adjacent middle meningeal artery. It is connected with the facial and glosso-pharyngeal nerves and sends branches to the tensor palati. In our library may be seen Friedrich Arnold's "Anatomie des Menschen," 3 vols. On page 909, Vol. 11, Arnold says, "Der Ohrknoten wurde von mir im Winter 1825-26 entdeckt." In English, "The optic ganglion was discovered by me in the winter of 1825-26." Professor Arnold noted 75 years ago that many tried in vain to show that others than himself discovered the ganglion. This ganglion shows connection with the larynx by way of the glosso-pharyngeal and tensor palate; and, through the Vidian nerve and Meckel's ganglion, with the nasal mucosa.

5. The submaxillary ganglion is situated on the lingual branch of the inferior branch of the trifacial nerve. Its sympathetic branch is derived from the plexus which surrounds the adjacent facial artery. This ganglion was discovered by Meckel in 1748. It has been named after him - Ganglion Meckelii Minus. The ganglion communicates with the facial or the seventh nerve.

[Fig. 207.](#) Nerves of internal genitals, pelvic brain, dissected under alcohol.

6. The sublingual or Blandin's ganglion is situated on the branch of nerves going to the sublingual gland. This collection of nerves may be only a plexus or a ganglion. It should have a similar connection with the submaxillary ganglion. Phillippe Frederic Blandin (1798-1849), a French surgeon, first described this ganglion in 1849.

7. The ganglion of Bockdalek is located at the junction of the middle superior dental nerve with the anterior superior dental nerve. It is not constant, and besides, the swelling may not always be a ganglion, i. e., may not contain nerve-cells. It lies above the upper canine tooth. Its discovery is due to Victor Alexander Bockdalek, Professor of Anatomy in Prague until 1869 (papers published in 1866), and Victor Bockdalek, his son, also an anatomist in Prague. However, it appears to be the father who discovered this ganglion, previous to 1851.

8. The ganglion of Valentine is situated at the junction of the middle superior dental nerve and posterior superior dental nerve. It is located above the second bicuspid tooth. The ganglion was discovered by Gabriel Gustave Valentine (1810-1888), a German anatomist. All the ganglia of the fifth cranial or trifacial have systematic connections.

We should have known that the trigeminus is supremely the ganglionic cranial nerve; that it is closely and intimately connected, especially with the genitals by way of the sympathetic tracts; also

that the trigeminus is closely and intimately connected, especially with the nasal mucosa, and to a considerable extent with the larynx and vocal cords. There are found to be numerous and intimate connections between the fifth cranial nerve (the trigeminus) and the seventh cranial nerve (the facial). Observation shows the intimate relation is accomplished by means of the sympathetic nerves, especially the ganglia on the trifacial. This physiologic relation of the genitals to the trifacial and facial nerves may be plainly observed in the sexual relations and cohabitations of animals.

Irritation of the nasal mucosa will cause congestion and erection. Occasionally irritation of the genitals will cause congestion of the face or the region of the trigeminus. Urethral irritation will induce "gritting" of the teeth, i. e., action of the masseter muscles, supplied by the inferior branch of the fifth.

Dr. A. G. Hobbs describes two cases of severe priapism, accompanying acute rhinitis (Jour. Am. Med. Assn., 1897). On spraying the nasal mucosa with cocaine the priapism immediately subsided. Opium affected the priapism in each case, but only to slight degree.

A reflex sneeze is not infrequent previous to erection. In preparations for coition the involvement of the nasal mucosa is quite apparent in animals, as the horse, dog, bull, etc. In monkeys the nasal mucosa is not only involved in coition, but it is evident that the larynx is highly involved, from the active and vigorous chattering, emitted previous to and during coition. The mare neighs at the approaching of the stallion or cow bellows at the approach of the bull, the growling of dogs, noise of cats and cackling of hens, are doubtless not accidental at times of coition, but due to irritation of nerve tracts.

The tissue covering the turbinated bones is quite erectile. A nasal reflex will induce an erectile action in the corpora cavernosa. We know that the genitals are intimately and profoundly supplied by the sympathetic nerves. We know that the fifth nerve is supremely the ganglionic (sympathetic) nerve of the brain. The fifth nerve sends a rich supply to the nasal mucosa and to the larynx through the vagus and glosso-pharyngeal.

Clinically and anatomically we note a close and intimate relation between the genitals and the nasal mucosa, the larynx and the sebaceous glands of the face. The whole manifestation is due to reflex action carried through the sympathetic nerves. The frequent hemorrhages from the nose during and subsequent to puberty in both sexes, demonstrate the intimate relation of the nasal mucosa. Again, why is it that so many women we note with chronic uterine disease also have rhinitis in different forms? A typical example came to my office a few days ago. She was 24 years old and single. At 20 she began to be irregular in menstrual function, and to have menorrhagia. Digital examination revealed quite a large, hypertrophic, metritic uterus, fixed by old adhesions, with distinct retroflexion. She said she bled frequently at the nose. The tissues covering the turbinated bones were thickened, inflamed and congested. Chronic rhinitis and metritis coexisted.

Many diseased generative organs co-exist with diseased nasal mucosa. The eight ganglia on the fifth cranial nerve - (1) Ganglion Gasser; (2) Ophthalmic; (3) Spheno-palatine; (4) Optic; (5) Submaxillary; (6) Sublingual; (7) Bockdalek; (8) Valentine - not only show the sympathetic nature of the fifth cranial nerve, but also intimate relation with the nasal mucosa, larynx, abdominal brain, and especially with the genitals.

NASAL DYSMENORRHEA.

The relationship between the nasal mucous membrane and the sexual apparatus is often forgotten. One should always remember that there is always a woman behind the uterus. In cases of persistent dysmenorrhea relief may sometimes be afforded by painting the genital spots in the nose with 1 per cent solution of cocaine, as demonstrated by Schiff, Emil Ries, Fliess and others. During menstruation there is congestion of the Schneiderian membrane not present during the rest of the month; a congestion which may also be produced by violent sexual excitement - the popular expression "bride's cold" being a laity

recognition of the relation between the nose and the sexual sphere. In most people there is a temporary swelling of the nasal mucous membrane just preceding and during the sexual act disappearing with detumescence.