Correlation between structural composition of Vitap marma and viddha lakshanas (traumatic symptoms) in male:

Introduction:
Ayurveda, which means "the science of life", has become recognized today for its wonderful dietary, herbal, life style therapies that help us to live longer happier and more in harmony with the greater universe of life and consciousness. Ayurveda is a part of the older spiritual heritage of humanity that contains secret knowledge and profound wisdom. Marma science is one of specialties of Ayurveda. According to Ayurveda, the knowledge of position of marma and marmabhigata (injuries to vital points) symptoms is essential before performing any surgical treatment.

The concept of marma forms a part of sharira. The direct understanding of the word Marma in ancient sciences was evident, but there were no sufficient techniques to make out their original structural aspect involved. In earlier ages, this science of marma was more developed in wars where the warriors used to achieve their target by destroying vulnerable points i.e marma of enemies. To extend the knowledge of marmas in clinical fields, it is necessary to know the actual structures present at those site. Marmas are certain vital points spread all over the surface of human body. These are the places where the prana (life force) is said to be situated. In modern surgery, they have not described the places where the vital points spread all over the surface of human body. These are the sites which are painful on application of pressure and shows abnormal pulsation should also be considered as marmas. The points are called marmas. These points are the sites of life. These are 107 such vital points in our body. Acharya Sushruta and Acharya Vagbhata have mentioned various types of marmas depending upon their sthan (position), rachana (constituents), viddha lakshanas (traumatic effect), parinam (prognosis), number and dimensions. Depend on upon affect of injury, marmas (causing are nomenclated as sadhya-pranahara (causes death), kalantarapranahara (causes delayed fatality), vishalyaghna (causes harmful effect on removal of shalya), vaikalyakara (causes debility), rajakara (causes pain). Out of them, vaikalyakara marma are the points where injury causes structural or functional deformity which are 44 in number, in each lower limb 6 vaikalyakara marmas are present. They are kurch, janu, aani, urvi, lohitaksha and vitapa. Injury to them causes symptoms which are very common in present era. The vitapa marma is explained as snayu marma by Acharya Sushruta and sira marma by Acharya Vagbhata. Thus this topic is selected to study its proper location with modern anatomy and also the structural involvement in injury causing viddha lakshanas specifically reproductive deformities as per Ayurveda.

Discussion:
Acharya Sushruta says that those sites which are painful on application of pressure and shows abnormal pulsation should also be considered as marmas. These points are the sites of life. These are 107 such vital points in our body. Acharya Sushruta and Acharya Vagbhata have mentioned various types of marmas depending upon their sthan (position), rachana (constituents), viddha lakshanas (traumatic effect), parinam (prognosis), number and dimensions. Depending on affect of injury, marmas causing are nomenclated as sadhya-pranahara (causes death), kalantarapranahara (causes delayed fatality), vishalyaghna (causes harmful effect on removal of shalya), vaikalyakara (causes debility), rajakara (causes pain). Out of them, vaikalyakara marmas are the points where injury causes structural or functional deformity which are 44 in number, in each lower limb 6 vaikalyakara marmas are present. They are kurch, janu, aani, urvi, lohitaksha and vitapa. Injury to them causes symptoms which are very common in present era. We found more than 50% marmas in adhoshakha (lower limbs) are vaikalyakara. Depending upon the structural classification, the vitapa marma is explained as snayu marma by Acharya Sushruta, and sira marma by Acharya Vagbhata. Thus, this topic is selected to study actual area containing vitap marma with reference to modern anatomy so that actual structural involvement in injury can be assessed to elaborate concept of vitap lakshanas in Ayurveda.
Thus, the vaikalyakara marmas are those points in the human body, injury to which can result in structural or functional deformity. Such six vaikalyakara marmas that are present in each lower limb are karch, janu, aani, urvi, lohitaksh and vitapa. Each of these has got unique significance if injury occurs to them. As per the dominant anatomical structures involved, the prognosis of injury varies from disfigurement of leg to paralysis or sometimes even death.

The word ‘vitap’ is described under sir marma by Acharya Vagbhata and snayu marma by Acharya Sushruta with dimension of one angula(area of one fingure). In male, after trauma on vitap marma leads to vaikalya that is shandhata (sterility) or alpa shukrata (oligosperma). Sthana of vitapa marma mentioned by Acharya is the joining area vankshan – vrushan. According to modern science, that region is accompanied with inguinal region. In male, the structures present that above mentioned site are.

From external to internal- skin, superficial fascia and inguinal canal. In male, spermatic cord and ilioinguinal nerve are chief components of inguinal canal. Structure present in Spermatic cord are, ductus deferens, testicular arteries, cremastic arteries and pampiniform plexus.

Ductus deferens- it is a duct which transfer sperm from epididymis to ejaculatory duct.

Testicular arteries- it is branch of abdominal aorta, supplies blood to testis.

Cremasteric arteries- it is branch of inferior epigastric artery, supplies blood to cremasteric muscle and covering of spermatic cord.

Pampiniform plexus- its function is venous return from testis to drain testicular vein, help to regulate the temperature of testis which is essential for sperm formation.

Genitofemoral nerve- branch of lumbar plexus, supply sensation to upper anterior thigh as well as skin of anterior scrotum in male.

lymph vessels from testis- lymph drainage of scrotum, remains of processus vaginalis.

If we assume the area of vitap marma mentioned by Acharyas i.e joining area of vrushan and vankshan, it is associated with area of spermatic cord as per traumatic effect, i.e shandhata(sterility), alpashukrata (oligosperma). Commonly spermatic cord injury caused by surgical trauma, accidental trauma, torsion induced trauma. Vas deference injury during herniorrhaphy leads to obstruction and thus sterility. Pressure exerted by varicocele ultimately responsible for sterility. Inflammatory pathogenesis of cord also causes sperm flow obstruction. Torsion or twisting of cord leads to sterility by obstructing pathway of sperm flow.

The involvement of ductus deference and entire cord in above pathogenesis or surgical complications, may lead to sperm flow reduction. Thus it may cause alpashukrata i.e. oligosperma and shandhata i.e. sterility.

Conclusion:-
Shandhata (sterility) and alpashukrata(oligosperma) are thevidhia lakshanas (traumatic effects) of vitap marma i.e the site between vrushan and vankshan according to Ayurveda. According to modern this site can be correlated to the inguinal region in which inguinal canal is present just above the medial half of inguinal ligament. Trauma to the inguinal canal can cause injury to the contents in the spermatic cord which leads to sterility or oligosperma.

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