

THE FEMALE BULBOSPONGINOSUS MUSCLE ATTACHES TO THE LATERAL SURFACE OF THE EXTERNAL ANAL SPHINCTER, NEW ANATOMICAL FINDINGS.

Hypothesis / aims of study

Urinary incontinence is troubling problem that prevent women from enjoying a full and active life. This problem has relations with injuries and deterioration of the pelvic floor muscles. These muscles are the skeletal muscles which hold up pelvic organs including bladder and uterus. The muscles are composed of the pelvic diaphragm (the levator ani and the coccygeus) and the perineal muscles. The latter is composed of the bulbospongiosus, the ischiocavernosus, the superficial transverse perineal muscle, the deep transverse perineal muscle and the external anal sphincter. These muscles constitute the pelvic floor, and support pelvic organs. Although a lot of anatomic and radiological studies about them have been reported, the anatomy of the pelvic floor muscles has been still unclear. The aim of this study is to clarify the detailed structure of the muscles of pelvic floor.

Study design, materials and methods

Ten Japanese female cadavers were used in this study. The cadavers were donated to this institution. The cadavers were fixed in 8% formalin and preserved in 30% ethanol. Macroscopic examinations were performed, and in a few specimens histological examinations were also performed. Specimens were cut in median plane, and were dissected meticulously. We identified the muscles of the pelvic floor, and recorded by taking photos.

Results

The bulbospongiosus muscle surrounds vestibular bulb on the lateral surface, and posteriorly attached to the lateral surface of the external anal sphincter. Although it has been generally described that the bulbospongiosus muscle attaches to the center of the perineum (perineal body), definite structure like a muscle or connective tissue mass was not clearly identified in the anterior to the external anal sphincter. Between the bulbospongiosus and the external anal sphincter, a clear border was not identified. Between this continuous muscle bundle and the ischiocavernosus muscle, a triangular space was recognized. The transverse perineal muscles were observed to occupy in the triangular space in various patterns.

Interpretation of results

The bulbospongiosus muscle directly attached to the external anal sphincter, to form a continuous muscle bundle.

Concluding message

Although perineal muscles have been considered to be composed by the independent muscles, according to the present findings, the borders among these muscles are not clearly identified. The perineal muscles should be considered to form a morphological and functional complex as a continuous muscle sheet.

Disclosures

Funding: All of the cadavers used in the present study were donated to the dissecting room of the School of Medicine, Tokyo Medical and Dental University. Before death, all of the donors had voluntarily expressed their will of donating their own body for anatomical education and study. This system has been established in 1983; The law of body donation for medical and dental education. Our study completely complied with the law. This work is supported by JSPS KAKENHI Grant Number 15K08129.

Clinical Trial: No **Subjects:** HUMAN **Ethics not Req'd:** All of the cadavers used in the present study were donated to the dissecting room of the School of Medicine, Tokyo Medical and Dental University. Before death, all of the donors had voluntarily expressed their will of donating their own body for anatomical education and study. This system has been established in 1983; The law of body donation for medical and dental education. Our study completely complied with the law. **Helsinki:** Yes **Informed Consent:** Yes