

MRI STUDY OF THE PELVIC FLOOR AFTER DELIVERY. DOES EPISIOTOMY CAUSE MUSCULAR ATROPHY IN FEMALE?

Aims of Study

The aim of this study is to determine the correlation between episiotomy and muscular atrophy in the female pelvic floor post delivery. MRI studies were performed to evaluate the incidence, grade and location of the muscular atrophy. The results were compared based on patients who performed or not the episiotomy.

Methods

This is a prospective, double blind study. Fifty female patients, 20 to 50 (mean 35) years old, were evaluated in two study groups: group1 – 30 patients with vaginal delivery and episiotomy and group2 – 20 patients with caesarean operation and without episiotomy (control for episiotomy). The patient selection was done clinically. Pelvic magnetic resonance (1.5T) examinations with turbo spin-echo sequences, T1 and T2 weighted, on axial, coronal and sagittal were analyzed by two different radiologists. The pelvic muscular groups were analyzed separately according to its location and grade of atrophy: pubococcygeal, iliococcygeal, puborectal, coccygeal and urethral sphincter muscles. The normal thickness pattern in normal women exams was previously evaluated in the literature¹. Atrophy was characterized comparing the results to the average and standard deviation of these normal measures. Qualitative assessment was also performed in parallel. Statistic analysis included Qui-squared test (χ^2) and Kappa test with significance interval of 95% ($p < 0.05$). The software adopted was the Stata Inc.

Results

There was a significant incidence of muscular atrophy in the pubococcygeal muscle for the episiotomy group1 (observer I, $p=0.04$ – observer II, $p=0.02$). The same fact happened in the iliococcygeal muscle for group1 (observer I, $p=0.02$ – observer II, $p=0.09$). The atrophy was seen only in the right side (episiotomy side). The contra-lateral side was always normal or hypertrophied. The urethral sphincter muscle did not present significant atrophy (observer I, $p=0.37$ – observer II, $p=0.46$). The coccygeal and puborectal groups did not present any kind of atrophy. There was no disagreement between both radiologists related to the absence of atrophy in these groups. A good concordance index of muscular atrophy for both radiologists was also seen (concordance index $>80\%$).

Conclusions

The episiotomy was responsible for muscular atrophy in the pubococcygeal and iliococcygeal groups. Anatomically, those were the respective musculatures incised during the procedure. Further studies are necessary to characterize the nature of the atrophy, if related to the muscle incision itself or secondary to nerve injury during the episiotomy.

References

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