Sectional Neuroanatomy of the Pelvic Floor
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INTRODUCTION: An increasing number of chemical denervation procedures with Botulinum-A toxin as well as percutaneous interventional procedures such as sacral or pudendal nerve stimulators and electromyographic studies are performed in the pelvic floor region for the evaluation and treatment of urinary incontinence, fecal incontinence, benign prostatic hypertrophy (BPH), and pelvic pain. Injections and stimulator electrode placement occur at many sites and do not correlate with routine EMG pin insertion sites.

OBJECTIVE: To provide anatomically accurate schematics of the pelvic floor with special attention to muscles and their innervation. These schematics can be used to increase the accuracy of EMG and minimize complications when performing chemical denervation and percutaneous procedures. They will also aid in interpreting MR images of the muscles and nerves of the pelvic floor region.

METHODS/RESULTS: Cross-sectional schematics of the pelvic floor were drawn as they appear in imaging projections. The major nerves were clinically grouped into color-coded categories. The muscles and skin surfaces were labeled and assigned the color (or colors) of the appropriate nerves. Both male and female variants were included.

CONCLUSIONS: An organized comprehensive map of the motor innervation of the pelvic floor allows the physician to increase the accuracy, efficacy, and distribution of botulinum toxin for chemical denervation procedures. This map may also assist electromyographers in planning their studies to detect neuronal injury or patterns of muscular changes in correlation with MR images. Finally, planning of other percutaneous procedures such as stimulator placements are made easier with anatomical schematics that correlate to MRI images.

Summary

In summary, this poster is the last in a series of articles detailing the neurovascular anatomy of the limbs, face, and spine for interventional procedures. It combines detailed anatomic and functional information concerning the pelvic floor. This information is needed to enhance the accuracy and efficacy of a variety of interventional procedures directed at the muscles, nerves, and vasculature of this region.