

Radical Pelvic Exenteration with Resultant Lower Extremity Deficits: A Case Report

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INTRODUCTION

Pelvic exenteration is an extensive, major procedure which removes all organs from a person's pelvic cavity. Major abdominal or pelvic surgeries can result in postoperative neuropathies, which are a well-recognized, but an understated complication. Injuries are usually caused by inappropriate stretching, prolonged compression, or direct trauma of a nerve. Clinical presentations can vary widely, from mild sensory symptoms to significant motor deficits, depending upon the location of the injury.

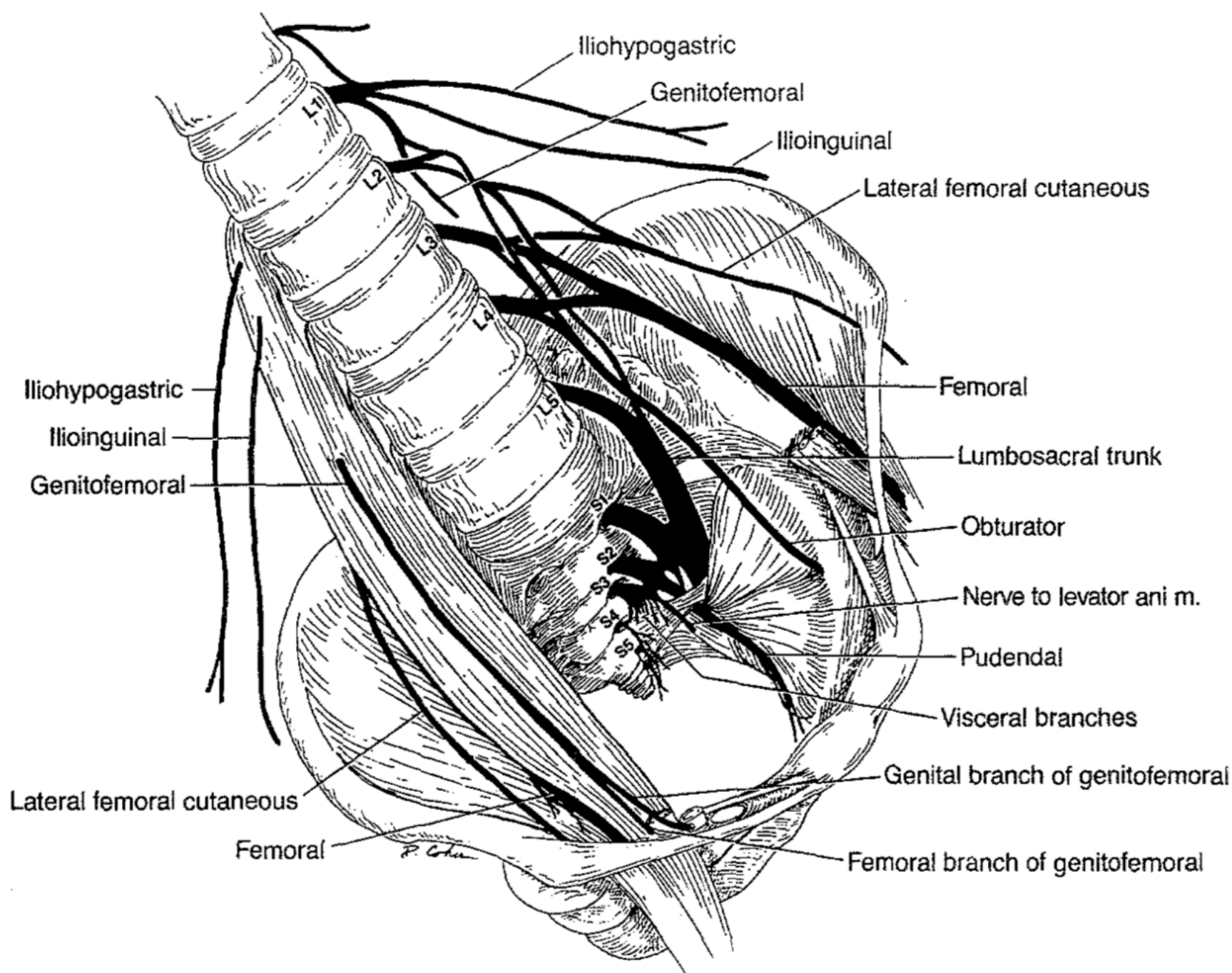
CASE DESCRIPTION

A 59-year-old female with stage IIIb cervical carcinoma, was initially managed with bilateral salpingo-oophorectomy, appendectomy, partial omentectomy, omental J flap, radiation therapy, and chemotherapy. She further required pelvic salvage anterior exenteration for recurrent malignancy, which was an aggressive surgical approach, but a viable solution. Following the surgery, she complained of persistent right lower extremity buckling interfering with ambulation. On exam, she was found with decreased strength in her right hip flexors, knee extensors, and hip adductors, with decreased sensation in the upper and medial leg, and an absent patellar reflex not present preoperatively. Per a Physical Medicine and Rehabilitation consult, a Bledsoe knee immobilizer was applied to prevent buckling, and physical therapy was initiated. An EMG was recommended to further assess and confirm her diagnosis of possible lumbar plexopathy affecting L2-L4 nerve fibers. Disposition recommendation was inpatient acute rehabilitation.

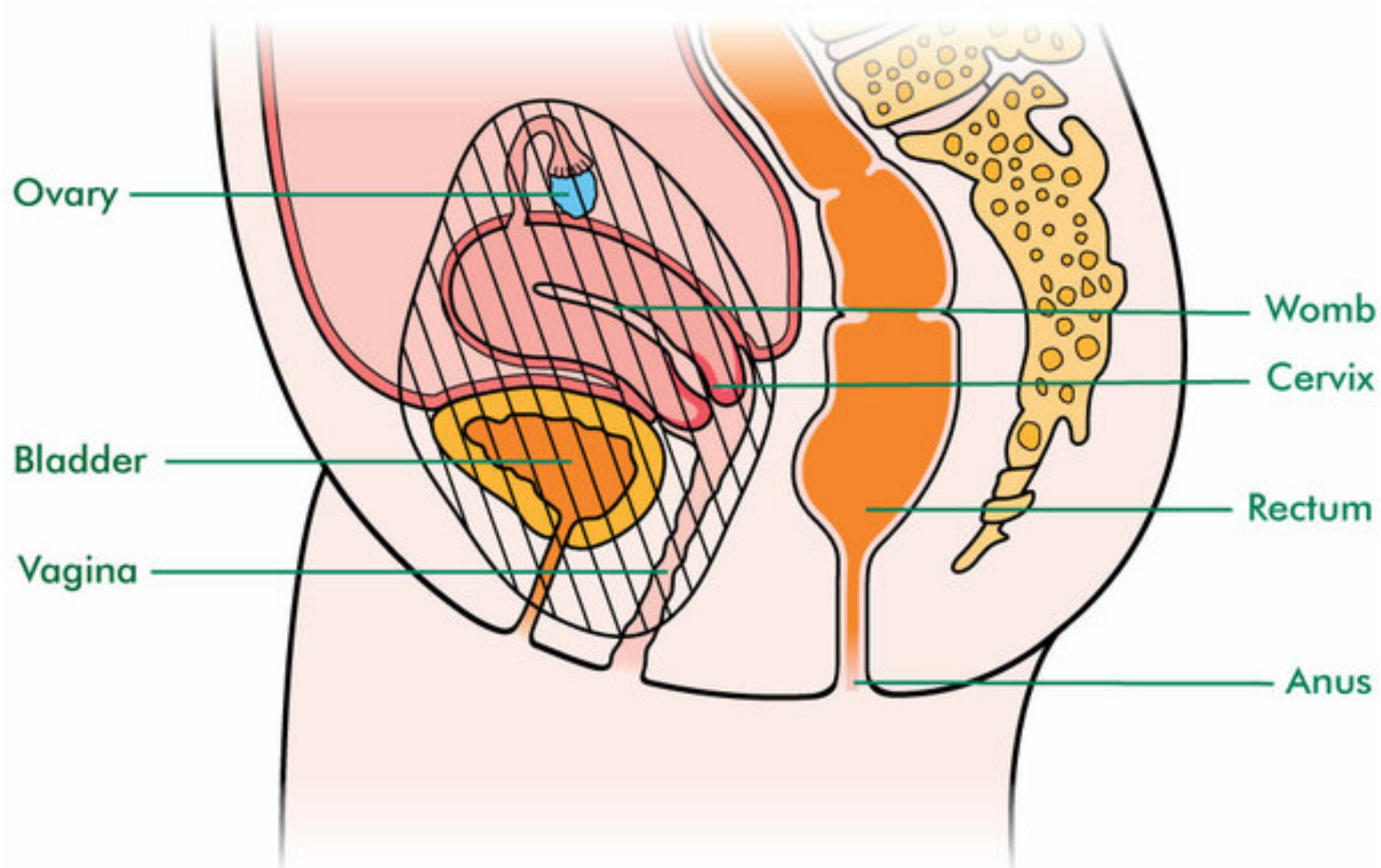
CLINICAL PRESENTATION AND ANATOMY

Postoperative neuropathies are most commonly caused by direct compression of the nerve itself, but can also be caused by stretching or even transection of the nerve, with a variation in clinical presentation sequelae.

Femoral neuropathy, for instance, is a widely cited complication of abdominopelvic surgical procedures. Injury to the femoral nerve can result in hip flexion and quadriceps weakness, with sensory impairment over the anteromedial aspect of the thigh, and a decreased or absent patellar reflex. Knee braces can be instrumental in the recovery process and have been shown to prevent falls and improve function for those with femoral neuropathy. The obturator nerve is also vulnerable to injury, particularly during radical or retroperitoneal surgery. Patients would present with adductor weakness with or without sensory loss over the medial thigh. Patients who experience ilioinguinal or iliohypogastric neuropathy can present with burning pain in the groin region. Less frequently reported is lumbosacral plexus neuropathy. The literature has cited this injury in patients who have undergone very radical resections for malignant disease.



A. The lumbosacral plexus with the psoas muscle removed on the left (From Burnett LS. Novack's textbook of gynecology. 11th ed. Baltimore [MD]: Williams & Wilkins, 1988:52)



B. The female pelvic organs, showing the areas removed during anterior exenteration (From https://www.macmillan.org.uk/cancer-information-and-support/treatment/types-of-treatment/surgery/types-of-pelvic-exenteration-for-women#anterior_exenteration)

DISCUSSION

Information regarding the incidence of postoperative neuropathies in abdominopelvic surgeries, the nerves involved, and the rehabilitation course is scarce. These complications frequently have favorable outcomes, but can oftentimes be debilitating if not properly diagnosed and managed. Early physiatry involvement can help identify patients with current impairments or those at risk for developing them.

Resections for metastatic and recurrent primary cancers are more common causes of lumbosacral plexopathy. The patient presented in this case report likely had a lumbar plexopathy based upon the distribution of her motor and sensory deficits in the setting of recent radical surgery. While plexopathies are less frequently reported, they might also be under-diagnosed due to their varying presentations.

There is a need to quantify and describe functional impairments among those who undergo pelvic or abdominal surgeries, particularly for gynecologic reasons, such as cancer. Most importantly, we should also examine physiatric participation in these cases and establish a larger, yet specialized, role in this patient population. Physiatrists can meaningfully contribute to improving the physical function and quality of life in these patients. Future studies should investigate rehabilitation needs and interventions.

CONCLUSION

It is crucial to thoroughly examine a patient after any abdominal or pelvic surgery for possible nerve injuries as this will affect functional outcomes and possible disposition. Although the literature describes this occurrence as rare, it may simply be underreported. An increased awareness of this sequela can help improve quality of life for these patients, and is an especially important consideration in women's cancer rehabilitation.

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