A popular method of interrupting section of the obturator nerve is to section its many peripheral branches high in the medial thigh as originally described by Stoffel in 1910. However, obturator nerve section in the thigh is frequently not as effective as section of the trunk higher because of accessory obturator nerves and branches of the main obturator trunk which may originate within the abdomen and pursue a variable peripheral course.

Selig in 1913 and 1914 reported an anatomical study demonstrating the possibility of low intrapelvic extraperitoneal section of the obturator trunk. A number of authors (reviewed by Chandler and Seidler and by Wischnewsky) have reported on the use of this technique. Chandler and Seidler reported 84 cases in 1939, in which the nerve was approached through a lower abdominal incision, just lateral to the lower border of the rectus muscle. In cases of bilateral section of the nerve these authors made a transverse skin incision with vertical deep dissection on the lateral side of each rectus abdominis muscle. Bonnet described a lateral iliolumbar approach through which the obturator nerve was located high beneath the iliopsoas muscle. The disadvantage of this technique is the lengthy incision and deep dissection. Recently, Freeman reported the combined section of the obturator and femoral nerves in paraplegics, through a single vertical incision which crossed Poupart's ligament. The approach to the obturator nerve, as described by this author, was essentially the Selig-Chandler approach. The femoral nerve was sectioned below Poupart's ligament.

During the past two years, we have employed a convenient transabdominal extraperitoneal approach to the obturator nerve high and laterally within the pelvis at the level of the anterior superior iliac spine. The details of surgical technique are described below and illustrated in Fig. 1.

The advantages of this operation are:

1. The nerve trunk is sectioned high enough to include all the branches.
2. The nerve is easily located in a field where it is unlikely to be confused with other structures.
3. The operation has the advantage of all extraperitoneal approaches in being bloodless and non-shocking.
4. The femoral and other nerves of the lumbosacral plexus can be sectioned either through the same approach or an upward extension of it.
5. The anatomic repair of the muscle-splitting incision allows the
patient to rise the same day of operation without danger of postoperative hernia.

We have performed 23 bilateral sections of the obturator nerve and 3 unilateral sections with no complications. Sixteen of the bilateral nerve sections have been in paraplegics in whom section of the femoral nerve was also performed through the same muscle-splitting incision. In these cases the femoral nerve was located in its downward course between the iliac and psoas divisions of the iliopsoas muscle, also at the level of the anterior superior spine. One small incision and one dissection suffice for the section of these two nerves on a single side.

**Fig. 1**

**OPERATIVE TECHNIQUE**

When both obturator nerves are sectioned, the skin is divided by a transverse lower abdominal incision. When a single nerve is sectioned, a slightly oblique 4 in. lower right or left quadrant skin incision is made. The abdominal muscles are then split in the direction of their fibers, as in the classical McBurney incision. As the preperitoneal fat is reached, the peritoneum is separated without opening and is pulled medially by stick-sponge dissection at the level of the anterior superior iliac spine. Posterior and medial dissection along the anterior surface of the iliacus fascia in the internal iliac fossa at the same level exposes the external iliac artery at the pelvic brim. The artery and the accompanying vein are carefully freed from the
lateral wall of the pelvis by blunt dissection. The external iliac artery and vein are then retracted medially in order to give a 1 in. wide interval between the lateral pelvic wall and the vessels. Deeper dissection in this opening reveals the obturator nerve slightly below and slightly lateral to the retracted external iliac vein, which is the deeper of these vessels.

The obturator nerve in its upper and middle course in the pelvis is a free-lying trunk, 1 to 3 mm. in diameter. There is no other structure in this locality with which it can be confused. The nerve is elevated by a blunt hook. During the process of elevation the nerve is usually irritated enough so that it is also at the same time identified by the resulting irregular stimulation of the adductors of the corresponding leg. The trunk is then sectioned with a cautery. The central end is turned upward, the retractors are removed, and the structures allowed to resume their normal relations. It is then necessary to perform only a layer closure of the abdominal wall without drainage. The patient rises on the same day of the operation and usually leaves the hospital the next day. The structures as viewed by the operator just before section of the nerve are shown in Fig. 1.

The only difficulty encountered by us has been in 2 cases in paraplegics, who also had a thickened bladder and pericystic inflammation due to urinary tract infection. In these cases the tissues in the lateral pelvis were indurated and adherent and the dissection deep to the external iliac arteries was slightly more difficult. In 1 of these cases the obturator nerves were embedded in scar, apparently produced by the same inflammatory process.

SUMMARY AND CONCLUSIONS

A convenient technique for abdominal extraperitoneal section of the obturator nerve at the level of the anterior superior iliac spine is described. This approach is especially useful for combined obturator and femoral nerve section in paraplegics who require relief from involuntary flexion-adduction hypertonus.

REFERENCES