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Indications

1. Carpal tunnel syndrome

Essential Steps

Intraoperative Details

1. Position supine with arm on padded arm board.
2. Place padded tourniquet around upper arm.
3. Mark out bony and soft tissue landmarks.
4. Perform incision 1 cm proximal to distal wrist crease and starting at ulnar border of palmaris longus.
5. Enter the antebrachial fascia.
6. Dilate the carpal canal.
7. Create a plane between the synovium and underside of the transverse carpal ligament.
8. Insert scope and visualize the transverse carpal ligament.
9. Completely release the ligament.
10. Close the skin.

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Postoperative Care

1. Soft dressing
2. Immediate ROM of hand and digits
3. Return-to-light duty when pain permits
4. Dressing changed to Band-Aid postop day 3
5. Heavy lifting delayed for 6 weeks

Possible Complications

1. Median nerve laceration
2. Recurrent motor branch of median nerve laceration
3. Palmar arch injury
4. Infection

Operative Dictation

Diagnosis: Right/left carpal tunnel syndrome

Procedure: Endoscopic right/left carpal tunnel release

Indication

This is a _____ who has been diagnosed with carpal tunnel syndrome. The treatment options for this were discussed with the patient in detail, and she/he wishes to proceed with an endoscopic release of the transverse carpal ligament.

The patient understands the risks, rationale, benefits, and alternatives associated with this procedure; all of his/her questions about the procedure have been answered.

Description of the Procedure

After verifying informed consent, the patient was brought to the operating suite and placed in the supine position. Bony prominences were padded and the upper extremity was placed on a padded arm board. A tourniquet was placed about the patient's upper arm padded with stockinette. A time out was held where the patient identification, surgeon to perform the surgery, surgery to be performed, surgical sites and laterality, instrument sterility, and antibiotic status were all verified.

Bony landmarks were drawn out on the hand. The pisiform was marked with a dot. The hook of the hamate was palpated and marked with a dot. A third dot placed equidistant from the hamate dot was from the pisiform dot such that all three dots lied in a straight line. This marked the distal extent of the transverse carpal ligament. The incision was marked out by measuring 1 cm proximal to the distal palmar crease and marking a 1–1.5 cm line starting at the ulnar border of the palmaris longus and extending ulnarly. The extremity was exsanguinated and tourniquet was inflated to 200–250 mmHg.

The skin was incised and blunt dissection was carried down to the antebrachial fascia protecting the subcutaneous veins that were in the field. The antebrachial fascia was bluntly entered transversely, in line with the fibers, and the scissors were used in a spreading motion to open an interval in line with the fibers.

The distal leaflet of the antebrachial fascia was retracted away from the synovium with a narrow double skin hook. The synovial elevator was used to dissect the plane between the synovium and the transverse carpal ligament. The space between the synovium and the transverse carpal ligament was entered with the smaller followed by the larger dilator curving the dilators toward and palpating the hamate hook

and dilating the carpal canal. The final dilator in the shape of the endoscope was used to ensure the scope will fit.

The endoscope was inserted under the antebrachial fascia and superficial to the synovium. While inserting the endoscope into the carpal canal, the undersurface of the transverse carpal ligament was visualized ensuring that the median nerve and its distal branches did not cross the field at any point.

The endoscope was inserted to the distance predetermined with skin markings as a guide. The blade was deployed no further distal than the distal extent of the transverse carpal ligament. The ligament was transected by pulling the endoscope proximally in a controlled slow motion for about 1.5–2 cm until just at the point where a fat lobule began to fall into view. The blade was retracted down and the scope can was advanced distally again into the partially released ligament and any residual bands were transected. The endoscope was then brought to the apex of the cut in the ligament and the blade was redeployed. The ligament and antebrachial fascia were transected completely to the level of the skin incision.

The endoscope was reinserted into the wrist and rotated slightly ulnarly or radially so that a leaflet of the cut fascia/ligament was in view over the scope, and this was followed distally to ensure complete release with the blade down. The endoscope was removed. Full release was further verified with the dilator.

The wound was gently irrigated. The skin was closed with nonabsorbable monofilament suture. Nonadherent porous gauze followed by dry gauze was placed over the incision followed by a lightly wrapped ace wrap with some folded gauze over the transverse carpal ligament to apply gentle pressure. The tourniquet was released.

Suggested Reading

Trumble TE, Diao E, Abrams RA, Gilbert-Anderson MM. Single-portal endoscopic carpal tunnel release compared with open release. *J Bone Joint Surg Am.* 2002;84:1107–15.