Abdominal Nerve Entrapments

Nerve	Origin	Pathway	Innervates	Cause of Injury (Cohen 2004; Minoo 2005)	Visceral Referral (Prendergast 2003)	Clinical Presentation	Tips for Clinical Assessment
Iliohypogastric nerve	L1	Runs over the iliopsoas Along the inner abdominal wall Penetrates the transverse abdominis at the iliac crest Travels between transverse and internal oblique	Skin above the pubic bone Lower abdominal muscles Posterior lateral gluteal region	Rarely injured alone Surgical procedures: hysterectomy, inguinal surgery Sports injuries: trauma to lower abdominal area Pregnancy: rapidly expanding abdomen	Refers to ovary and distal fallopian tube	Pain in distribution along pathway especially with palpation of scar	Assess TL junction, pelvic girdle pain and pelvic joint posture; assess iliopsoas length, and scar tissue mobility and pain provocation
Ilioinguinal nerve	L1	Travels: inferior to hypogastric nerve between layers of the abdominal wall	Pubic symphysis Mons pubis, root of penis External genitalia: labia majora, anterior scrotum Upper medial thigh (femoral triangle)	Lower abdominal incisions: hysterectomy, abdominoplasty, appendectomies Inguinal surgeries: nodes, femoral catheter placement Pregnancy Iliac bone harvesting	Visceral component: can refer pain to the proximal tube and uterine fundus	pain in distribution along pathway especially with pressure at nerve exit at inguinal canal or medial ASIS; increased with hip extension (walk in trunk flexion)	Same as above for Iliohypogastric; up to 75% of patients will have pain with palpation/ tapping at inguinal ligament
Genitofemoral nerve	L1,L2	Through psoas at the level of L3-4 Superior to the psoas near ureter Splits into genital and femoral branches Under the inguinal ligament: femoral branch pierces sartorius muscle	Upper anterior thigh lateral to ilioinguinal - femoral branch Labia majora, medial thigh, cremaster muscle, spermatic cord - genital branch	Hernia repair, inguinal surgeries or trauma Pregnancy, posterior abdominal wall trauma Appendectomies, cesarean delivery	Refers to proximal tube and uterine fundus	Hypesthesia over anterior thigh below inguinal ligament Pain increased with hip internal or external rotation, prolonged walking, light touch	Differentiate: iliohypogastric and ilioinguinal do not refer below ligament

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Lateral femoral cutaneous nerve Aka" Meralgia paresthetica"	L2, 3, (4)	Deep to iliopsoas Anterior to quad lumborum Superficial to iliacus toward ASIS Under the inguinal ligament inferior and slightly medial to the ASIS	Anterior branch: lateral and anterior thigh to knee Posterior branch: lateral greater trochanter to mid-thigh	Most commonly injured by compression at inguinal ligament inferior to ASIS Pressure from belts, girdles, tight pants, seatbelt in motor vehicle accident, obesity , Pregnancy, abdominal tumors, fibroids, Pelvic asymmetry (leg length) Diabetic polyneuropathy	fundus and lower uterine segment	Pain increased with prolonged walking, standing, or hip extension May increase with prone position Usually unilateral Decreased with sitting unless compressive cloths are present	Most common 20 to 60 years old
Femoral nerve	L2, 3, 4	Through psoas muscle Superior to iliacus Under inguinal ligament	Quadriceps, sartorius, pectineus, psoas, iliacus Medial anterior thigh and lower leg: cutaneous Knee joint	Diabetic neuropathies: A common cause of entrapment is prolonged lithotomy: surgeries that require prolonged acute flexion, abduction, external rotation of hips. Pressure from the fetal head during difficult delivery, Pelvic fracture or hyperextension injury Pelvic radiation and tumors , THR	none	Pain in the inguinal region partially relieved by hip flexion and external rotation Difficulty walking and knee buckling Pain increased with hip extension and decreased with ER Weakness of hip flexion and knee extension Decreased quad tendon reflex	Most common Injury beneath inguinal ligament/scar tissue:

