**Introduction**

Inguinal region swelling and palpable masses are frequently encountered in the clinical setting. They present a diagnostic challenge as they encompass a wide variety of disorders. We present a case of an unusual cause of an inguinal mass in a young female. It is so unusual that many providers are unaware of its existence.

**Case Description**

- A 29 year old healthy woman presented with a tender right groin mass the size of a grape. The mass had been present for three weeks causing pain with walking.
- She had no surrounding erythema, swelling, fever, chills, weight loss, or night sweats. There was no preceding trauma to the area.
- Physical exam revealed normal vital signs, a medial inguinal nodule approximately 2 cm in size, which was slightly tender to the touch. There was no change with Valsalva maneuver. There was no palpable lymphadenopathy.
- Labs with normal CBC.
- Inguinal US demonstrated a 2.2x0.8x2.5 cm non-compressible hypoechoic nodule just to the right of the midline and medial to the femoral vessels. There was no vascularity on Doppler and no change with Valsalva maneuver.
- A subsequent contrast enhanced CT scan demonstrated thickening within the right inguinal canal along the round ligament. There was a fluid density compatible with a hydrocele of the canal of Nuck.
- The patient was referred for surgical consultation and decided to proceed with laparoscopic resection of the lesion.

**Clinical Course**

- With a possible diagnosis of hematoma, the patient was discharged home with a follow-up plan.
- As symptoms persisted, a repeat US was obtained a month later and revealed an enlarging complex cystic structure.
- A subsequent contrast enhanced CT scan demonstrated thickening within the right inguinal canal along the round ligament. There was a fluid density compatible with a hydrocele of the canal of Nuck.
- The patient was referred for surgical consultation and decided to proceed with laparoscopic resection of the lesion.

**Discussion**

- Incomplete proximal obliteration of the canal of Nuck (the female counterpart of the processus vaginalis in males) leads to a congenital patent pouch of peritoneum between the round ligament of the uterus and the labia majora.
- This may result in the development of a cystic swelling, which is not reducible and does not worsen with Valsalva maneuver. This can happen at any age!
- Hydrocele ≠ Inguinal hernia, as no omentum or intestine are present within the sac.

**Differential Diagnosis of Inguinal Swelling/Mass**

| Trauma (hematoma, soft tissue injury) | Anatomic (inguinal hernia, femoral hernia, Bartholin’s cyst) |
| Infectious (abscess, lymphangitis) | Vascular (femoral aneurysm, DVT) |
| Benign neoplasms (lipoma, neurofibroma) | Malignant neoplasms (lymphoma, sarcoma, metastasic disease) |

**Take Home Points**

- The differential diagnosis for an inguinal mass in a young woman is broad and encompasses pathologies from multiple systems.
- Female hydrocele, also known as a cyst of the canal of Nuck, is an unusual diagnosis that ought to remain on the differential.
- US is invaluable in evaluation of inguinal masses.

**References:**