Abstract:
Elephantiasis nostras verrucosa represents longstanding obstruction of the lymphatic drainage, leading eventually to grotesque enlargement of the chronically dependent and immobile parts of the body. Although morphologically comparable with classic filarial elephantiasis, ENV is a separate, nonparasitic mediated disorder. There are about 8 reported cases of abdominal elephantiasis in the literature. We are reporting a case of ENV in anterior abdominal wall, as a complication of obesity which has been surgically managed.

Keyword: Elephantiasis nostras verrucosa, nonparasitic lymphedema, nonpitting edema, abdomen, obesity.

Case report:
50 year old morbidly obese nulliparous lady, presenting to us with protuberant belly for over five years, it has been gradually increasing to attain present size.
Clinical findings:
Weight-112Kg, Height-154cm,BMI-52- MORGIBID OBESEMorbid obese abdomen with a massive apron of panniculus reaching up to mid thigh and in most prominent dependant part - 30*40 CM - firm edematous plaques with a cobbstone appearance, nonpitting edema, no ulcerations, no discharge, no dilated veins, striae present no intraperitoneal /abdominal wall mass, cough impulse, hernia orifices free no axillary, inguinal lymphadenopathy, external genitalia and extremities normal no clinical evidence suggestive of phlebolymoedema, clinically no evidence of filariasis
diagnosis: diagnosis is clinically with history and physical examination alone, and to rule out other causes of secondary lymphedema. Investigation: Ultrasound abdomen - excess fat deposition in anterior abdomen wall, no hernia Thin/thick blood smear, QBC (quantitative buffy coat) for microfilaria-negative 24 hour urine 17-ketosteroid assessment of adrenocongenital obesity - normal limits Thyroid profile - euthyroid status Cardiologist evaluation - low cardiac risk Pulmonologist evaluation - moderate risk for surgery Treatment given: Surgical Procedure - panniculectomy with repositioning of umbilicus. (since there were no lymphadenopathy either bilateral inguinal or axillary nodes, nodovenous shunt was not considered. moreover as the precipitating factor was the chronically dependent immobile area, this could be easily eliminated by panniculectomy) Precautions for procedure - preoperative incentive spirometry, intraoperative central line access, deep vein thrombosis prophylaxis given with low molecular weight heparin, which was continued post operative for three days, both lower-limb compression stocking given perioperatively. Anesthesia - epidural anesthesia Position-supine Procedure - kleins tumescent solution local infiltration in lower abdomen, lower pfannenstiel incision made, upper abdominal flap raised up to umbilicus, periumbilical incision
made, umbilicus stalk isolated. Panniculectomy of the overhanging apron with ENV skin and subcutaneous changes excised in toto, umbilicus repositioning done. Layered closure of wound done. Skin closed with 2/0 ethilon interrupted vertical mattress stitch. Two suction drains placed. Compressive dressing done. Excised panniculus was 6 kg, sent for histopathology.

**Histopathology report:**
Hyperkeratotic epidermis with loss of dermal papillae, fibrosis of the dermis and subcutaneous tissues, with dilated lymphatics.

**Follow up:**
Patient is being followed up for a period of three months, no evidence of recurrence.

**Review of literature**
Elephantiasis nostras verrucosa - "nostras" indicates "from our region" (temperate zone) ENV represents longstanding obstruction of the lymphatic drainage, leading eventually to grotesque enlargement of the chronically dependent and immobile part(s) of the body. ENV is an uncommon, potentially disfiguring, presenting with dermatologic sequelae of chronic lymphatic obstruction. ENV typically appears in gravity-dependent regions, most commonly the lower extremities, but has been reported in the upper extremities, abdominal pannus, buttocks, orbital area, lips, ears, and scrotum. Alternative terms - "lympho-static verrucosa, “lymphostatic papillomatosis cutis,” "elephantiasis curum papillaris et verrucosa,""Although clinically comparable with classic filarial elephantiasis, ENV is a separate, nonparasitic mediated disorder. 1934, Castellani - classified elephantiasis - 4 subtypes:

1. Elephantiasis tropica: caused by filariasis (eg, Wuchereria species);

2. Elephantiasis nostras: which is secondary to recurrent bacterial cellulitis/lymphangitis;

3. Elephantiasis symptomatica: caused by conditions such as tuberculosis, syphilis, fungi, neoplasms, and surgery;

4. Elephantiasis congenita: in association congenital conditions like Milroy and meiges disease

**ENV hypothesis**
that the protein-rich fluid which accumulates in the interstitium provokes an inflammatory response impairing the local immune response, thus predisposing the patient to soft tissue infections such as cellulitis, and lymphangitis. With even inoculation from insignificant trauma, poor hygiene, and dry fissured skin. With each bout of soft-tissue infection especially Streptococcal and, less often, staphylococcal lymphangitis is considered to be the most likely causative agent, the lymphatics becomes fibrotic and the affected part becomes more edematous and enlarged. The affected skin undergoes epidermal hyperkeratosis and fibrosis of dermis and subcutaneous tissues. In time thus producing the characteristic clinical appearance of ENV: Diagnosis is clinically with history and physical.
examination alone, and to rule out the secondary causes lymphedema.

Management:
There is no established standard of care for the treatment of ENV.
Initial conservative treatments - elevation of the affected limb, compression with bandages or stockings, massage, and pneumatic compression devices. Acute lymphangitis, appropriate antibiotics, oral and topical retinoids - etretinate and tazarotene, respectively, which decrease epidermal proliferation, fibrogenesis, and inflammation.

Surgical options - debridement, partial lipectomy, nodovenous anastomosis, amputation in extremity if extreme, even one case of abdominal ENV was treated by shaving the verrucous area with a blade of a freehand knife and by subsequent abrading of the mossy area, and reepithelization in 2 weeks.

Conclusions:
Abdominal skin involvement in ENV is rare and has been reported in only seven cases in literature. Obesity was considered as a predisposing factor for ENV in our case after ruling out the other cause.
Obese patients are at an increased risk for skin infections and impaired skin and soft tissue wound healing. It is theorized that excessive adipose tissue can impair lymphatic drainage and lead to the buildup of protein-rich lymphedema and associated fibrosis and inflammation. This case is one of very few cases to have been managed surgically. Early diagnosis and intervention can prevent the complication and gross deformities.

Bibliography:
2. Castellani A. Researches on elephantiasis nostras and elephantiasis tropica with regard to their initial stage of recurring lymphangitis (lymphangitis recurrens elephantogenica).