



## Case Report

### Doppelganger solitary pedunculated tumours in pelvic girdle of obese females: Histopathological study of three cases.

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#### Abstract

Pedunculated tumours are soft, compressible skin-coloured solitary lesions, predominantly occurring on buttocks and thighs that need to be categorized rightly. We describe three solitary pedunculated masses of the pelvic girdle encountered in obese females. Primary clinical differential diagnoses included fibroepithelial polyps, lipoma, papilloma and nevus lipomatosus superficialis. Histopathological features helped in narrowing down definitive diagnosis of these look alike lesions as pedunculated lipofibroma or solitary form of Nevus Lipomatosus Cutaneous Superficialis (NCLS) which is a broad-based lesion with aggregates of mature adipocytes extending into the dermis and Fibroepithelial polyp which displays loose dermal fibrocollagenous stroma with entrapped blood vessels in the absence of admixed adipose tissue. Though treatment of choice for these lesions is excision, it would be of interest for pathologists to be acquainted with these clinical mimics displaying divergent histology.

**Keywords:** Adipocytes, Nevus, Pelvis, Polyyps.

#### Introduction

Pedunculated skin covered soft tissue growths can present as solitary or multiple lesions. They commonly occur on pelvic regions like buttocks, thighs, and non-pelvic areas like axilla, arms and knees. The main differential diagnoses are fibroepithelial polyps, lipoma, papilloma, neurofibroma, and less frequently Nevus Lipomatosus Cutaneous Superficialis (NLCS).<sup>1</sup>

We present three cases of pedunculated skin covered masses in obese females - two located in thigh and other over labia, all presenting as gradually progressive pedunculated masses. The objective of our

report is to differentiate histopathologic features of these look alike lesions.

#### Case History

##### Case 1

A forty-four-year-old obese woman presented with a swelling gradually increasing in size over the medial aspect of right thigh since six months, with no associated pain. On examination, it was skin covered, pedunculated, non-tender and firm in consistency with overlying skin appearing cerebriform. (Figure 1a). The mass was excised and sent for histopathological evaluation with a provisional diagnosis of pedunculated papilloma. The skin covered mass measured 5.5 x 5 x 4 cms with a small stalk attached. External skin surface was cerebriform (Figure 1b, 1c)

Microscopically the dermis showed lobules of mature adipocytes with entrapped blood vessels and fibrocollagenous tissue. (Figure 2a,2b), supporting the diagnosis of Pedunculated Lipofibroma - a solitary form of Nevus Lipomatosus Cutaneous Superficialis.

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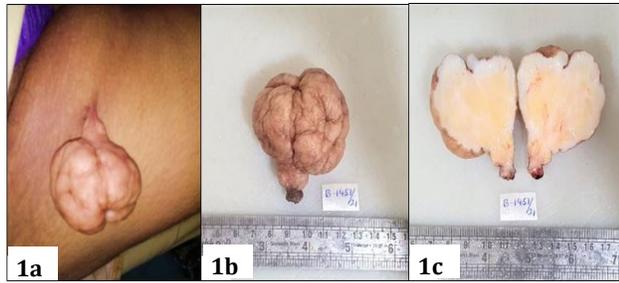
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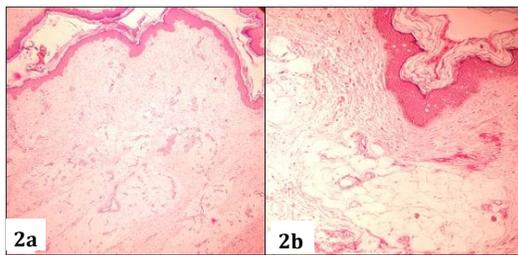
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**Figure 1a:** Skin covered pedunculated tumour on the right thigh of an obese female.

**Figure 1b:** Surface showing cerebriform appearance.

**Figure 1c:** Cut section showing areas of myxoid and fatty tissue.

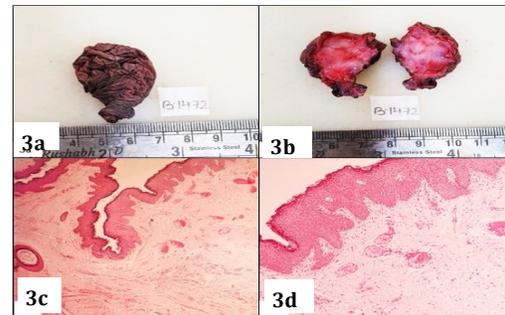


**Figure 2a & 2b:** Microscopy displaying lobules of mature adipocytes with entrapped blood vessels and fibrocollagenous tissue in dermis. 2a. (H&E 40x) 2b. (H&E 100x)

### Case 2

A twenty-six-year-old obese woman presented with a swelling in left labial region, with an insidious onset increasing in size over the past two months. The patient had no past history of local trauma or injections. On examination, it was skin covered, pedunculated, non-tender and firm with wrinkling of skin. Clinical diagnosis was pedunculated lipoma. A mass of 4 x 3 x 1.5 cms with a small stalk was received. (Figure 3a,3b)

Microscopy showed a mildly acanthotic epidermis. Dermis displayed loose fibrocollagenous stroma with entrapped adnexal structures and congested blood vessels. No adipose tissue was seen admixed. (Figure 3c, 3d). A diagnosis of Fibroepithelial polyp (Acrochordon) was conferred.



**Figure 3a:** Skin covering showing wrinkled appearance.

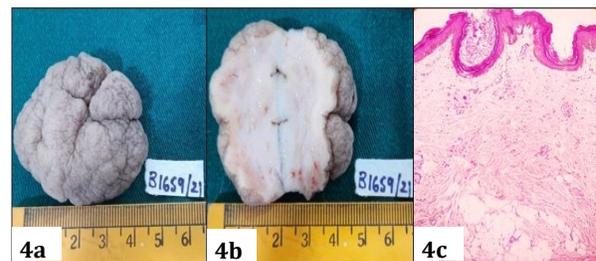
**Figure 3b:** Cut section showing myxoid areas with congestion.

**Figure 3c & 3d:** Microscopy showing loose fibrocollagenous stroma in dermis with adnexal structures and congested blood vessels without adipose tissue. (H&E 40x).

### Case 3

A sixty-five-year-old obese, diabetic woman complained of a painless growth in the right upper inner thigh region present since six years and gradually increasing in size. The swelling was skin covered, pedunculated, non-tender with surface appearing cerebriform. Clinical diagnosis was pedunculated fibroma.

Grossly the mass measured 5 x 4 x 3 cms with a stalk (Figure 4a, 4b). Microscopy favoured Pedunculated Lipofibroma - a solitary form of Nevus Lipomatous Cutaneous Superficialis (Figure 4c).



**Figure 4a:** Surface of mass showing cerebriform appearance.

**Figure 4b:** Cut section showing myxoid areas admixed with fatty tissue.

**Figure 4c:** Microscopy showing dermis displaying lobules of mature adipocytes admixed with fibrocollagenous tissue (H&E 100x).

**Discussion**

Differential diagnosis of pedunculated skin covered soft tissue masses include fibroepithelial polyps, lipomas, papillomas, neurofibromas and rarely Nevus Lipomatosus Cutaneus Superficialis (NCLS).<sup>2</sup> Though clinically identical in presentation the lesions are histologically distinct.

Fibroepithelial polyps are also known as acrochordons, skin tags or soft fibromas They are benign skin tumours usually less than one cm in diameter, typically presenting as multiple, skin-coloured to brown, pedunculated papillomas in intertriginous areas, such as neck, axillae, and inguinal areas. Acrochordons often increase in number during weight gain or pregnancy and may be related to growth hormone-like activity of insulin. They may also occur in patients with diabetes mellitus.<sup>3</sup> In our case patient was non- diabetic but obese.

NLCS is a rare idiopathic hamartomatous anomaly presenting as soft, skin coloured flattened papules or nodules that have smooth or wrinkled surfaces. The lesions are linearly distributed with a predilection to pelvic girdle.<sup>4</sup> It was first reported by Hoffman and Zurhelle in 1921.<sup>5</sup> Clinically, NLCS should be differentiated from nevus sebaceous,

connective tissue nevus, neurofibroma, lymphangioma, hemangioma, and focal dermal hypoplasia. Histology of NCLS shows ectopically situated dermal mature adipocyte tissue. They can be of two types. Classic (or multiple) type, which usually presents within first three decades of life with clusters of soft, cribriform, and peau d'orange appearance, most commonly on lower trunk, especially on the back, buttocks, or hips and on upper posterior thighs.<sup>4</sup> The solitary type, or pedunculated lipofibroma, presents as a dome-shaped, slow-growing, pedunculated mass usually after thirty years of age.<sup>6</sup> This form can occur on buttocks, thighs and non-pelvic areas, such as axillae, arms, knees, ears, and scalp and is termed as fibrolipoma,<sup>6,7</sup> similar to our cases.

Pathogenesis of NLCS is unclear. It has been hypothesized that deposition of adipose tissue in dermis is secondary to degenerative changes in dermal collagen and elastic tissue, or due to displacement of subcutaneous adipose tissue into the dermis.<sup>8,9</sup> Systemic abnormalities and malignant change have not been reported. Treatment is cosmetic, with surgical excision being the preferred option. Cryotherapy is an alternative treatment.<sup>10</sup> A concise summary of differences between these two entities is highlighted in below table.<sup>1</sup>(Table :1)

**Table 1: Concise summary of differences between Fibroepithelial Polyp and Nevus Lipomatosus Cutaneus Superficialis (NLCS).**

Highlights	Fibroepithelial polyp/Acrochordon	Nevus lipomatosus cutaneus superficialis
<b>Definition</b>	<ul style="list-style-type: none"> <li>Benign skin tumour, usually less than 1 cm in diameter</li> </ul>	<ul style="list-style-type: none"> <li>Benign connective tissue nevus characterized by ectopic fatty tissue in the dermis.</li> <li>Varying in size depending on solitary/multiple forms</li> </ul>
<b>Epidemiological characteristics</b>	<ul style="list-style-type: none"> <li>Seen in obese patients or during pregnancy</li> <li>Related to growth hormone-like activity of insulin</li> <li>In patients with diabetes mellitus</li> </ul>	<ul style="list-style-type: none"> <li>Classic (or multiple) type usually presents within first three decades of life</li> <li>Solitary type, or pedunculated lipofibroma, presents as a dome-shaped, slow-growing, pedunculated mass, usually occurs after 30 years</li> </ul>
<b>Clinical characteristics</b>	<ul style="list-style-type: none"> <li>Solitary or multiple</li> <li>Skin-coloured to brown, pedunculated growths</li> <li>Common sites - intertriginous areas, such as the neck, axillae, and inguinal areas</li> </ul>	<ul style="list-style-type: none"> <li>Solitary or multiple</li> <li>Multiple form present as clusters of soft, cribriform, and peau d'orange appearance</li> <li>Common sites- lower trunk, especially on back, buttocks, or hips and upper posterior thighs</li> <li>Solitary form presents as dome-shaped, slow-growing, pedunculated mass termed as Lipofibroma</li> </ul>
<b>Histopathological characteristics</b>	Unremarkable epidermis with dermis displaying loose fibrocollagenous stroma with congested blood vessels. No adipose tissue seen admixed	Unremarkable epidermis with dermis displaying lobules of mature adipocytes with entrapped blood vessels admixed with fibrocollagenous tissue

**Other differential diagnosis are**

**1. Lipomas**

Solitary or multiple, benign, subcutaneous tumours composed of fat cells. most often occurring on the trunk, abdomen, or neck, followed by proximal extremities, but can occur anywhere. They present as soft, skin-coloured, subcutaneous non-pedunculated mobile nodules. <sup>1</sup>

**2. Neurofibromas**

Benign tumours of peripheral nerve sheath presenting as multiple or solitary lesions. Multiple neurofibromas occur with neurofibromatosis or von Recklinghausen disease. They are usually asymptomatic, polypoid, slow-growing, soft, rubbery, pink to skin-coloured papules or nodules varying in size. Larger lesions may become pedunculated over time. With pressure, lesions invaginate into the underlying dermal defect giving rise to buttonhole sign. <sup>1</sup>

Though the treatment of choice of these lesions is excision, it would be of interest for the pathologists to be aware of these histologically distinct entities that we intent to highlight in this study.

**Conclusion**

Pedunculated soft tissue growths encountered in daily practice cogitate a wide variety of differential diagnoses. Though epidemioclinical presentations are similar, it would be of interest to differentiate them by histomorphological evaluation for definitive categorization and academic intrigue.

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