

Direct Insertion of Muscle Fibers is not Restricted to Facial Skin

Facial musculature is divided into masticatory muscles, i.e. *M. masseter* and *M. buccalis*, with bony insertions and smaller facial muscles involved in facial expression, which insert into bone and skin. There are four fixed osteocutaneous points of the face, i.e. zygomatic (Mac Gregor), mandibular (Furnas), orbital (Psillakis), and masseteric with an antigravitational effect and functional role in facial expression (1,2).

In other body parts, the direct insertion of muscle fibers into skin has not been reported. In the neck-shoulder region, direct insertion of skeletal muscles into the skin can be observed during surgery in this area. We observed this phenomenon in 3 adult male patients (51-65 years old) during lipoma surgery. In our case series, lipomas were of the superficial subcutaneous type. After local anesthesia with 1% ropivacain, a fusiform skin incision was followed by en bloc resection of the lipoma. During resection, we became aware that muscle fibers of *M. levator scapulae* inserted into the back skin (Figure 1). This has practical implications for surgery because of possible pain when these fibers need to be cut to deliver a lipoma or other subcutaneous tumors.

Lipomas are a common benign tumor of the subcutaneous adipose tissue, known as the superficial type. However, lipomas may occur intramuscularly,

intermuscularly, parosteally and intra-osseously (3). In the deep subtypes of lipoma, pain and discomfort may be a leading clinical symptom whereas superficial lipomas often are asymptomatic (4,5). Surgery is the treatment of choice, while liposuction and laser-lipolysis are alternatives (6).

During surgery of lipomas of the shoulder/neck region, direct insertion of muscle fibers of *M. levator scapulae* into skin was noted – an observation possibly underreported in surgical literature.

References:

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Figure 1. (a) Lipoma after en bloc resection with encapsulated enlarged adipocytes. (b) Surgical situs demonstrates direct muscular insertions into the skin of the shoulder region.

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