

In a patient with malignant melanoma, there are several contemporaneous anatomical variations that present challenges for synchronous neck and axillary lymphadenectomy and latissimus dorsi flap repair.

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Abstract

The anatomy skills surgeons learn in college stay with them for the majority of their careers. When performing surgery, it's crucial to be knowledgeable of unusual anatomical variations. The authors provide a case in which three anatomical variations were discovered in three distinct anatomical sites in a single patient during a single surgical procedure. These included Langer's muscle, the spinal accessory nerve's transjugular route, and the peculiar arrangement of the femoral vessels at the inguinal ligament. Despite cadaveric studies reporting an incidence of up to 7% for the latissimus dorsi muscle anomaly and up to 1% to 3% for a transjugular accessory nerve, clinical experience suggests that they are much less common and can still catch surgeons off guard, even those with extensive experience. After the cautious surgeon discovered one abnormality in Will be aware that there might be others when caring for their patient.

Key words

Transjugula, Langer's muscle, Spinal accessory nerve, Axillopectoral arch, Femoral vessels.

Case Presentation

A 10 cm locally progressed polyp-oid nodular ulcerated malignant melanoma with Breslow thickness of 35 mm and

Clark's level V was discovered in a 74-year-old woman. The posterior J Pikturnaite, TC Wright, and IC Josty were the areas where the tumour was discovered. In a patient with malignant melanoma, several concurrent anatomical variants present challenges to synchronous neck and axillary lymphadenectomy and latissimus dorsi flap repair. *plast surgery Case Studies*, 1(1) (2015): 24–26. The anatomy skills surgeons learn in college stay with them for the majority of their careers. When performing surgery, it's crucial to be knowledgeable of unusual anatomical variations. The authors provide a case in which three anatomical variations were discovered in three distinct anatomical sites in a single patient during a single surgical procedure.

These included Langer's muscle, the spinal accessory nerve's transjugular route, and the peculiar arrangement of the femoral vessels at the inguinal ligament. Despite cadaveric studies reporting an incidence of up to 7% for the latissimus dorsi muscle anomaly and up to 1% to 3% for a transjugular accessory nerve, clinical experience suggests that they are much less common and can still catch surgeons off guard, even those with extensive experience. The cautious surgeon will be aware that there might be further anomalies after identifying one in their patient. **Key Words:** Spinal accessory nerve, Langer's muscle, femoral vessels, and axillopectoral arch; On fine-needle aspiration cytology, a transjugular triangle of the neck with a palpable node in the deltopectoral groove was identified as a metastatic melanoma.

The surgical strategy includes total axillary clearance, level II-V selective neck dissection, and synchronous tumour excision (Memorial Sloan-Kettering classification). A pedicled latissimus dorsi (LD) muscle flap that was tunnelled through the axilla, over the clavicle, and into the neck was proposed for use in soft tissue restoration. When inserting a femoral venous catheter, the anaesthetist noticed an unexpected relationship between the femoral veins and the inguinal ligament. This was the first anatomical variation. It is highly rare, according to the literature, for the femoral vein to be found posterior to the femoral artery (2). An ultrasound scan was used to visualise the abnormality, ensuring a successful and problem-free cannulation but adding time to the process.

An auxiliary slip emerging from the LD muscle's primary bulk was discovered during axillary clearing.

After splitting the anterior deltoid muscle, it passed anterior to the axillary neurovascular systems and the biceps before inserting into the proximal humerus. The muscle is known as Langer's muscle after the Austrian anatomist who originally characterised this anatomical variety in the 19th century. It is referred to in the literature as the axillary or axillopectoral arch. The internal jugular vein (IJV), which split to allow the spinal accessory nerve to pass and then reformed into a single trunk superiorly, was observed to be punctured by the spinal accessory nerve during neck dissection. In contrast to the other two options for the SAN's anterior neck triangle path (crossing the IJV prior to it in 80% of instances and posterior to it in 19% of cases [3]), the transjugular course is incredibly uncommon, making up just 1% to 3% of all investigated cases (4,5). Later, a reassessment of the preoperative computed tomography images confirmed all three findings.

DISCUSSION

All three anatomical variants have been individually described by previous writers, but none have been combined in a single case. The femoral vein is said to run medial to the femoral artery as it passes deep to the inguinal ligament, according to conventional anatomical teaching. Only anecdotal occurrences of the spatial link between femoral vessels that we discovered in our patient—in which the femoral vein was situated close to the artery—have been documented. Igari et al. (2) used a Doppler ultrasound to examine 2552 limbs to look for any abnormalities in the femoral vein and its tributaries in relation to the femoral artery. In one instance (incidence 0.02%),

At the location of the saphenous opening, the femoral vein and artery were reversed. Given this published literature information, it is reasonable to presume that the femoral neurovascular architecture layout is generally inferior to the inguinal ligament and that venous cannulation in this region is safe. Our treatment might have led to complications like an arteriovenous fistula or a femoral pseudoaneurysm since we might have perforated the wrong vessel if we hadn't followed the standard procedure of employing ultrasonography for femoral cannulations. Additionally, it can warn the surgeon that the patient may have additional anatomical variations that are interesting but might be harmful. Two further irregularities were discovered in our situation. One of the most prevalent musculoskeletal anomalies in humans is Langer's muscle. It appears in 2–6% of dissections (6,7). Additionally, this anomaly has been described in conjunction with other anatomical variations of the upper limb's flexor compartments (1).

A single subject with many anatomical variations Case Studies in Plastic Surgery Vol. 1 No. 1 Summer 2015 25 At the location of the saphenous opening, the femoral vein

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Two further irregularities were discovered in our situation. One of the most prevalent muscular anomalies in the axilla is Langer's muscle. It appears in 2–6% of dissections (6,7). Additionally, this anomaly has been described in conjunction with other anatomical variations of the upper limb's flexor compartments (1). The Langer's muscle can induce intermittent venous blockage, and as such, should be taken into consideration when there are pertinent symptoms, according to Sachatello (8) in 1977. Hafner et al. (9), who documented a case involving a 17-year-old girl with comparable symptoms, corroborated this more recently. With the removal of the muscle slip, these issues were fully cured.

Deep vein thrombosis (10), lymphedema in the absence of other reasons, and compression of the brachial plexus nerves have all been attributed to Langer's muscle (6,7). As previously indicated, the existence of Gantzer's muscle, for instance, can also result in median nerve compression, therefore the axillary arch may not always be the sole reason of nerve compression. Fortunately, none of these symptoms were present in our case. However, after removing the main tumour, we used the LD muscle as a pedicled flap to rebuild the soft tissue defect of the supraclavicular region. The Langer muscle had to be removed because the blood supply could not be determined during this surgical surgery, potentially increasing the risk of partial flap loss due to insufficient vascularity.

A transjugular course of the SAN is to some degree a more extraordinary experience. Setty (11) distributed a solitary instance of SAN puncturing the IJV in 1960 and cited a case distributed in German from 1928 by Kessel. In their in vivo study, Hinsley and Hartig (4) found that the SAN punctured the IJV in <1% of cases (one out of 116). A comparative rate is accounted for in cadaveric concentrates by Taylor et al (5) in 2013 (5) (two of 207 cases) and Saman et al (3) in 2011 (one of 67 cases). While this physical variety is of an incredible scholastic interest, it doesn't seem to bring on any useful issues in itself, except if interventional methods, like femoral cannulation, are required. The presence of such physical variations requires additional watchfulness and change of careful procedures. Having found one anatomical abnormality, it would be pointless to look for irrelevant vari-subterranean insects at far off destinations except if it was clinically shown. In this way, it is conceivable that numerous corresponding physical variations/peculiarities in a solitary individual are under-

reported. While cadaveric examinations report a frequency of up to 6% for the irregularity of the LD muscle, 0.02 % for rendering of femoral vessels in the predominant part of the femoral triangle and up to 3% for the transjugular course of the SAN, clinical experience recommends it is considerably more uncommon and can shock even the most experienced specialists. The attentive specialist, having recognized one abnormality in their patient, ought to be careful that there might be others.

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