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Ultrasonography findings of papillary renal neoplasm with reverse polarity

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To the Editor,

A papillary renal neoplasm with reverse polarity (PRNRP) is a newly recognized renal tumor, which is characterized by a papillary or tubular structure lined by a single layer of eosinophilic cells with apically located round nuclei [1]. Most of the literature on this neoplasm has reported pathological features, and reports on its imaging findings are extremely rare. Here, we present a case of a PRNRP characterized by not only conventional ultrasound but also contrast-enhanced ultrasound.

A 63-year-old woman was referred to our hospital after the identification of a mass in her kidney during a health check-up examination. She had a history of renal calculus and cysts for 5 years. At admission, conventional ultrasonography revealed that the solid mass in her right kidney was about 15×12 mm in size, with an oval form, an ill-defined margin, extra-kidney extension, a hypoechoic composition, and an inhomogeneous echotexture (fig 1a). Moreover, the ultrasonography showed a dot-like blood flow signal inside the mass and a circular blood flow signal around the mass (fig 1b). Furthermore, contrast-enhanced ultrasonography was performed, and it showed fast in and simultaneous out movements of the contrast agent, as well as slightly homogeneous enhancement in internal echogenicity and circular enhancement in peripheral echotexture, compared with the renal cortex, which is generally described as a pseudocapsule sign (fig 1c,d). Finally, the patient underwent surgical excision of the mass, and a pathological diagnosis of a PRNRP was made. There was no recurrence or metastasis at a 6-month postoperative follow-up.

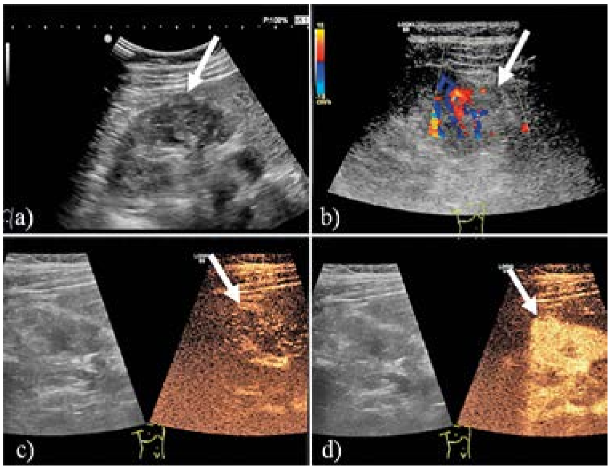

Fig 1. a) The mass (arrow) located in the right kidney is oval, hypoechoic, inhomogeneous, and ill-defined, with extra-kidney extension; b) A dot-like blood flow signal is noted inside the mass, and a circular blood flow signal is noted around the mass (arrow); c) The mass (arrow) shows the fast movement of the contrast agent and circular enhancement in peripheral echotexture at the 10th second; d) At the 11th second, the mass (arrow) shows a slightly homogeneous enhancement in internal echogenicity.

Most PRNRPs are found in elderly patients (median age, 66 years; age range, 46 to 80 years), and there are no obvious differences between male and female patients. The tumors are usually unilateral and small, with a median size of 1.4 cm (range, 0.6 to 3.0 cm). However, only a few tumors are incidentally identified by ultrasonography which shows an oval, well-defined, and hyperechoic mass. As PRNRPs appear to exhibit indolent biological behavior on follow-up, without any recurrence, metastasis, or tumor-related death, it is important to differentiate

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them from other papillary renal cell carcinomas in preoperative diagnosis [2].

References

1. Al-Obaidy KI, Eble JN, Cheng L, et al. Papillary renal neoplasm with reverse polarity: a morphologic, immunohistochemical, and molecular study. Am J Surg Pathol 2019;43:1099-1111.
2. Liu Y, Zhang H, Li X, et al. Papillary renal neoplasm with reverse polarity with a favorable prognosis should be separated from papillary renal cell carcinoma. Hum Pathol 2022;127:78-85.

Ultrasonic findings of transient perivascular inflammation of the carotid artery syndrome: a case report

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To the Editor,

A 36-year-old man presented to ENT department for sudden onset pain on the right laterocervical region 3 days before. The pain was described as a mild dull sense of discomfort. It was considered to be secondary to an upper airway infection. However, the patient reported no recent infection, fever, or flu symptoms.

On physical examination, a focal tender point was identified over the upper border of the thyroid cartilage corresponding to the level of the right carotid bifurcation, worsened by palpation or head and neck movements. Furthermore, basic laboratory hematological examination showed normal complete blood count and inflammatory markers such as erythrocyte sedimentation rate and C-reactive protein.

An ultrasound examination of the neck revealed thickened wall mostly of the posterior and lateral aspects of the distal common carotid artery, carotid bulb, and proximal internal carotid artery on the right side of the neck. Hypoechoic eccentric thickening of the wall involved the medial-adventitial layer of the carotid artery and hypoechoic tissue encircled the involved carotid artery, with the range of about 23×4 mm (fig 1a,b). On Doppler studies, the affected carotid artery on the right side showed normal flow parameters and no distinct luminal stenosis was identified. The abnormal sonographic findings corresponded to the maximum point of clinical tenderness on the neck. In contrast, the left side of the neck was normal.

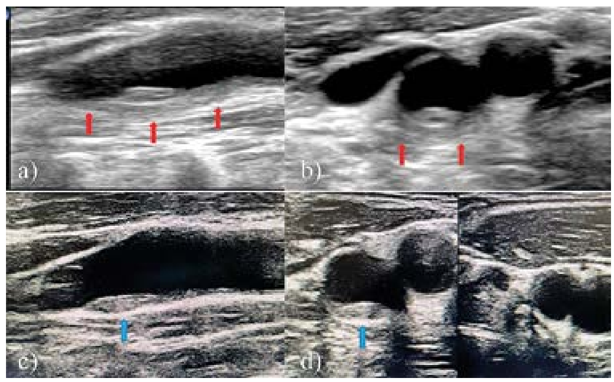

Fig 1. a) and b) Ultrasound images in longitudinal and transverse views revealed hypoechoic eccentric thickening (red arrows) along right common carotid bifurcation; c) and d) a 12-month follow-up ultrasound revealed a significant reduction in thickness and extent of perivascular soft tissue in longitudinal and transverse views (blue arrows).

Based on the spectrum of ultrasonic findings with associated clinical features, a diagnosis of transient perivascular inflammation of the carotid artery (TIPIC) syndrome was made. The clinical symptom improved ten days later with anti-inflammatory treatment. A 12-month follow-up ultrasound was performed that revealed a sig-

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nificant reduction in thickness and extent of perivascular soft tissue (fig 1c,d).

TIPIC syndrome is considered a distinct but unclassified clinical disease and is believed to be caused by a nonspecific inflammation of the carotid artery, which is essentially described as a transient self-limiting pathology [1,2]. In summary, the ultrasound features, the relief with anti-inflammatory treatment and the negative laboratory workup in our case all favored the concept of TIPIC syndrome. The case we reported represented a characteristic case of TIPIC syndrome, in the field of clinical-ultrasound findings and benign course. In addition, ultrasound is particularly useful in the diagnosis of TIPIC syndrome.

Reference

1. Rafailidis V, Chryssogonidis I, Tegos T, Partovi S, Charitanti-Kouridou A, Staub D. Role of multi-parametric ultrasound in transient perivascular inflammation of the carotid artery syndrome. Ultrasound 2019;27:77-84.
2. El Nawar R, Villain N, Baud JM, De Malherbe M, Pico F. Carotid contrast-enhanced ultrasonography and multimodal imaging in a case of TIPIC syndrome. Rev Neurol (Paris) 2018;174:304-307.

Echocardiographic identification of right atrial mass: a case of cardiac angiosarcoma

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To the Editor,

In a 49-year-old man, in sinus rhythm, without previous history of cardiovascular disease, at routine transthoracic echocardiography (TTE) a mass in the right atrium (RA) was found. The mass was round, sessile, measuring 27x22 mm, and was located on the roof of RA (fig 1a). Due to the absence of thrombus or myxoma features, this case was highly likely to be considered a malignant tumor, and angiosarcoma was the first consideration. Chest X-ray, electrocardiogram, blood tests, and coronary angiography revealed normal findings. Histopathological examination of the surgically resected mass confirmed the preoperative diagnosis (fig 1b).

Primary heart tumors are relatively rare in the clinic. In adult autopsies, the incidence of primary heart tumors is about 0.001%-0.03% [1]. Benign tumors are mainly atrial mucinous tumors, and malignant tumors are mainly angiosarcoma or undifferentiated sarcoma. Malignant tumors of the heart account for 20-25% of cardiac neoplastic lesions [2]. Primary cardiac angiosarcoma should be differentiated by myxoma and thrombosis. The majority of cardiac myxomas (95%) are in the left atrium, and most have pedicles that tend to occur in the oval fossa of the atrial septum, with a wide range of mobility, including atrioventricular valve obstruction. Cardiac thrombosis (in the left atrium most commonly) usually has a history of rheumatic heart disease, coronary heart

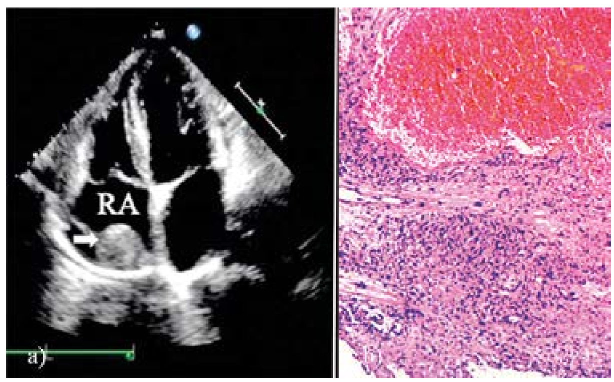

Fig 1. Echocardiographic and morphological appearance of the mass located in the left atrium (RA): transthoracic echocardiography evidenced an immobile round mass (arrow) on the RA (a); the histopathologic aspect of the cardiac angiosarcoma (b).

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disease, atrial fibrillation, etc., and manifest by embolism and infarction in any part of the body. At TTE, in recent thrombus, frequently movable hypoechoic flocculent mass or debris can be easy identified. In contrast, the old thrombus often is presented as a hyperechoic solid mass in a relatively fixed position.

The symptoms of cardiac angiosarcoma mainly depend on the tumor's location, the range of myocardial wall invasion and the degree of obstruction. TTE is the first choice imaging technique for cardiac hemangiosarcoma diagnoses. Correctly recognizing the ultrasound characteristics of cardiac angiosarcoma allow rapid positive and differential diagnosis.

References

1. Linfeng Q, Xingjie X, Henry D, Zhedong W, Hongfei X, Haige Z. Cardiac angiosarcoma: A case report and review of current treatment. Medicine (Baltimore) 2019;98:e18193.
2. Kodali D, Seetharaman K. Primary cardiac angiosarcoma. Sarcoma 2006;2006:39130.

From grapes to huazhimaru: A case of brachial plexus injury hidden in traumatic brain injury

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To the Editor,

Concurrent traumatic brain injury (TBI) and brachial plexus injury (BPI) are difficult to diagnose and treat. According to the previous literature, the incidence of BPI in patients with TBI is 10.3% [1].

Herein, we report the case of a 36-year-old man with TBI in the bilateral frontal and temporal lobes presented with bilateral hemiplegia. After the acute phase, he underwent a rehabilitation program for 5 months. The motor functions of his right limbs progressively recovered, but his left limbs remained flaccid. Additionally, recent computed tomography (CT) scans revealed bilateral frontal lobe encephalomalacia, which was more severe on the left side, suggesting that the clinically weak side was not correlated to the brain CT image. Furthermore, the significant difference in muscle power and absence of deep tendon reflex of the left upper extremities are implications of BPI.

Ultrasound (US) was performed and enlarged nerve fascicles of the root at the interscalene groove compared with those at the healthy side were revealed (fig 1). The normal US pattern of the root at the interscalene groove should resemble a bunch of grapes; however, it resembled a bunch of huazhimarus in this case [2]. Electrodiagnostic studies confirmed the left plexopathy with a lesion above the root level, and magnetic resonance imaging revealed left brachial plexus avulsion injury with pseudomeningoceles in the left spinal canal that extended to the medial neural foramen without visualization of the C5, C6, and C7 preganglionic root.

Dual injuries, such as those in the present case, may be caused by excessive traction force between the neck and shoulder due to lateral flexion, rotation, and hyperextension of the vertebrae. Early detection and proper treatment are essential for upper extremity recovery in patients with concurrent BPI and TBI. Some injuries may remain undiagnosed in coinstantaneous BPI and TBI. Therefore, we need to establish an optimal plan to inves-

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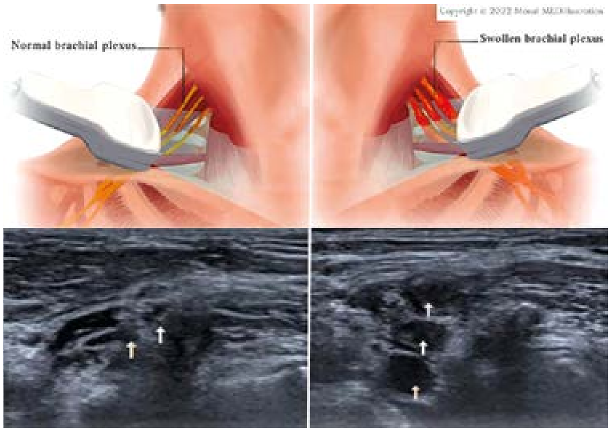

Fig 1. Ultrasound image showing enlarged nerve fascicles of the root at the interscalene groove compared with those at the healthy side. The normal sonographic pattern of the root at the interscalene groove should resemble a bunch of grapes; however, it appeared as a bunch of huazhimarus in this case.

tigate this type of injury, in which both upper and lower motor neurons are injured [3].

Hidden BPI in TBI is difficult to diagnose. Preganglionic lesions cannot be detected with US; however, US is still a convenient tool for first-line medical imaging for cases of suspected BPI.

References

1. Tezel N, Can A, Cankurtaran D, Akyüz EÜ, Çakcı A.. Brachial Plexus Injuries in Adults with Traumatic Brain Injury: A Retrospective Study. J Korean Neurosurg Soc 2021;64:255-260.
2. Hsu PC, Chang KV, Mezian K,et al. Sonographic Pearls for Imaging the Brachial Plexus and Its Pathologies. Diagnostics (Basel) 2020;10:324.
3. Lin HY, Guo JY, Tsai SJ. Coinstantaneous Brachial Plexus Injuries in a 55-year-old Man with Traumatic Spinal Cord Injury: A Case Report and Literature Review. Tw J Phys Med Rehabil 2020;48:163-166.

Rare liver cancer complicated with hereditary hemorrhagic telangiectasia

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To the Editor,

Primary liver cancer grows rapidly and has a low 5-year survival rate. We present the case of a 78-year-old male patient with liver cancer without treatment in the last eight years, with a slow growing of the tumor and no significant deterioration of the health status. We suspect that the patient suffered from a rare autosomal dominant genetic disorder at the same time.

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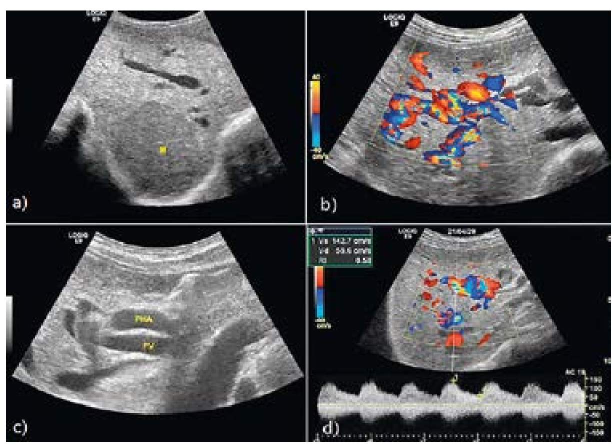

Fig 1. a) Image of liver cancer with clear boundary and uniform echo; b) color Doppler image of intrahepatic blood flow; c) the proper hepatic artery and portal vein at the first hepatic hilar show "double barrel shotgun sign"; d) the intrahepatic artery velocity increased to 142.7 cm/s.

Ultrasonography revealed that the tumor had clear boundary and uniform echo (fig 1a). The blood supply of the liver was abundant (fig 1b), and the celiac trunk, common hepatic artery, proper hepatic artery and intrahepatic branches were tortuous and dilated. The inner diameter of the proper hepatic artery at the first porta hepatis was about 1.0 cm, the peak flow rate was about 152 cm/s, and the resistance index was 0.66. It showed a "double-barrel shotgun sign" with the portal vein (fig 1c), while the peak flow velocity of intrahepatic artery was increased to 142.7 cm/s (fig 1d). According to the ultrasonic diagnostic criteria proposed by Caselitz et al [1], it was diagnosed as hereditary hemorrhagic telangiectasia (HHT) with liver involvement.

HHT is characterized by extensive telangiectasia of the skin, mucosa and viscera. Endoglin (vascular endothelial glycoprotein) deficiency, caused by mutations in the gene encoding Endoglin on chromosome 9, is the main cause of this disease [2]. Endoglin can regulate cell proliferation, extracellular matrix synthesis, vascular development and remodeling through transforming growth factor-β signal pathway [3]. The loss of Endoglin expression in HHT patients can interfere with the blood supply of hepatoma cells, even promote the formation of fibrous capsule, and delay tumor growth and metastasis.

On the other hand, the inhibition of vascular endothelial cell proliferation by HHT can lead to abnormal hepatic microvessels and perfusion, aggravate hepatic fibrosis and ischemia, induce the production of hypoxia-inducible factor-1 α, and then participate in the formation of liver cancer. This patient had no history of hepatitis and cirrhosis so we should consider whether the formation of liver cancer was only related to the hepatic hypoxia microenvironment caused by HHT.

This case is liver cancer complicated with HHT, which is very rare. Whether HHT promotes or inhibits liver cancer, or develops in mutual restraint, needs further study.

Reference

1. Caselitz M, Bahr MJ, Bleck JS, et al. Sonographic criteria for the diagnosis of hepatic involvement in hereditary hemorrhagic telangiectasia (HHT). Hepatology 2003;37:1139-1146.
2. Sugden WW, Siekmann AF. Endothelial cell biology of Endoglin in hereditary hemorrhagic telangiectasia. Curr Opin Hematol 2018;25:237-244.
3. Kasprzak A, Adamek A. Role of Endoglin (CD105) in the Progression of Hepatocellular Carcinoma and Anti-Angiogenic Therapy. Int J Mol Sci 2018;19:3887.

Ultrasound examination and follow-up of post traumatic injury of the proximal lateral head of gastrocnemius

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To the Editor,

A 64-year-old female complained of posterior knee pain and swelling after a fall on the extended knee (slipping on a wet floor). The pain was localized on the lateral aspect of the popliteal fossa, rated 7 over 10 on the Visual Analogue Scale (VAS). Palpation of the posterior aspect of the knee revealed swelling of the lateral side with a firm consistency.

Ultrasound examination (Samsung HS70A machine) showed a normal aspect of lateral collateral ligament, distal biceps tendon, iliotibial tract, popliteal tendon and posterior cruciate ligament [1]. Switching the probe on the proximal lateral head (LH) of gastrocnemius, the long and short axis sections evidenced swollen hyperechoic fibrillar bundles separated by anechoic bands of edema (fig 1A,C). The proximal muscular belly of LH, on the long axis view, displayed an anechoic ovoid gap surrounded by an hypoechoic halo within the muscular

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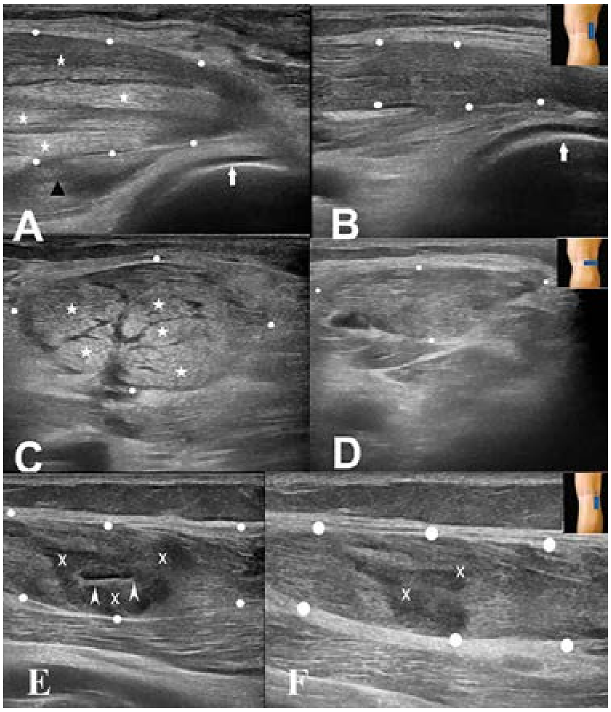

Fig 1. Lateral head proximal tendon and belly. A. Long axis scan (tendon), swollen structure with hyperechoic fibrillar bundles separated by bands of edema; B. The same scan, 4 weeks later, resolution with a normal appearance; C. Short axis scan (tendon) with a swollen tendon composed of hyperechoic bundles separated by anechoic bands of edema; D. The same scan, 4 weeks later, resolution with a normal appearance (white dots - limits of the tendon, asterisks - hyperechoic fibrillar bundles, white arrow - lateral femoral condyle, black triangle - plantaris muscle. E. Long axis scan on muscle, an ovoid anechoic gap, a partial tear (white arrowhead) surrounded by edema as a hypoechoic halo (marked by x); F. The same scan, 4 weeks later, disappearance of the tear and residual area of edema.

fibrillar structure (fig 1E). We diagnosed a tendon sprain and partial muscular tear. Moderate physical activity restriction was recommended. Four weeks later patient had symptomatic improvement and ultrasound showed an almost normal structure (fig 1B,D), resolution of the previous tear of the proximal muscular belly, with a restant inhomogenous hypoechoic area with irregular contour within the muscle mass (fig 1F).

Proximal LH tendon and muscular injuries are uncommon sources of posterior knee pain. They may occur less often or they may be just overlooked. Repetitive knee flexion and extension or brisk extension are factors predisposing to tendon sprain [2]. When fabella is present, it may be the source of acute pain with fracture or displacement or, in chronic cases, it may lend itself to knee osoteoarthritis (fabellar syndrome) [3-5]. The proximity of lateral collateral ligament, distal biceps tendon, popliteus tendon creates clinical confusion concerning pain origin. Ultrasound examination was able to precisely identify the source of pain and disfunction and to follow up the patient. The characteristic aspects of the proximal tendon sprain and partial muscular tear and their evolution toward resolution were concordant with the clinical evolution.

References

1. Özçakar L, Kara M, Chang KV, et al. EURO-MUSCULUS/USPRM. Basic scanning protocols for knee. Eur J Phys Rehabil Med 2015;51:641-646.
2. Chang KV, Wu WT, Özçakar L. An Overlooked Cause of Posterior Knee Pain: Ultrasound Imaging and Guided Injection for Proximal Lateral Gastrocnemius Tendon Sprain. Med Ultrason 2020;22:377-378.
3. Driessen A, Balke M, Offerhaus C, et al. The fabella syndrome - a rare cause of posterolateral knee pain: a review of the literature and two case reports. BMC Musculoskelet Disord 2014;15:100.
4. Cherrad T, Louaste J, Bousbaä H, Amhajji L, Khaled R. Fracture of the Fabella: An Uncommon Injury in Knee. Case Rep Orthop 2015;2015:396710.
5. Barreto AR, Chagas-Neto FA, Crema MD, et al. Fracture of the fabella: a rare injury in knee trauma. Case Rep Radiol 2012;2012:390150.

Ultrasound imaging of atrophic levator labii superioris and levator anguli oris after aesthetic facial botulinum toxin injection

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To the editor,

A 35-year-old woman had received botulinum toxin (BoNT) injections for her left cheek eight years ago to correct the prominent nasolabial fold. Unfortunately, she had suffered from drooping of the left upper lip following injections, which had gradually/partially improved thereafter. Recently, she visited our clinic for persistent facial asymmetry. During physical examination, although she could voluntarily elevate her left mouth angle, the motion appeared sluggish. Ultrasound scanning was performed with the transducer first placed over the left lateral cheek to inspect the zygomaticus major and minor muscles. Both appeared normal in terms of echotexture and size. The transducer was then moved more medially until the infra-orbital foramen was seen. It was pivoted to the sagittal plane to identify the levator labii superioris and levator anguli oris muscles. They were more hyperechoic and thinner on the affected (fig 1A) than on the normal side (fig 1B). Iatrogenic atrophy of the aforementioned muscles was diagnosed.

BoNT curbs the nerve endings from releasing the acetylcholine, leading to paralysis of the injected muscles. It can be used for the treatment of post-stroke spasticity [1], relief of musculoskeletal pain [2] and trimming/smoothing facial lines in the cosmetic field [3]. The benefit of BoNT lies in its limited active duration (usually three months post-injection) [4] and its effect is considered reversible. In our case, BoNT injection is likely to incur a long-lasting sequela which might be attributed mainly to two reasons. First, aesthetic injections over the facial region are still directed by palpation. Most cosmetologists do not verify the course of the nearby nerves using ultrasound before the interventions. The levator labii superioris and levator anguli oris are innervated by the buccal branch of the facial nerve [5] which might have been accidentally punctured in our patient. Second, the levator labii superioris and levator anguli oris are in

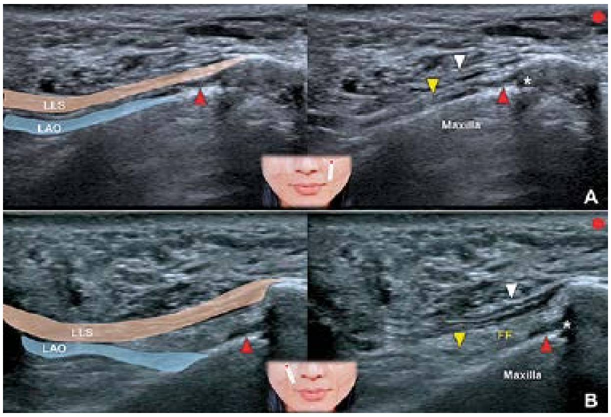

Fig 1. Comparative ultrasound imaging of the facial muscles at the infra-orbital region. Affected side (A), normal side (B).LLS: levator labii superioris (white arrowhead), LAO: levator anguli oris (yellow arrowhead), red arrowhead: infra-orbital vessel, white asterisk: infra-orbital foramen, FF: fibrofatty tissues.

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proximity to the infra-orbital foramen [3] which harbors the infra-orbital artery and vein. These vessels might have been inadvertently damaged, leading to hematoma or bruising of the adjacent muscles. The excursion of the muscles - in relation to their fasciae and underlying periosteum - could have also been hampered, causing asymmetric facial expression. In short, the present case highlighted the precision of ultrasound imaging in localizing the injured muscle after facial cosmetic procedures and the need for ultrasound guidance in facial aesthetic injections.

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References

1. Hsu PC, Chang KV, Chiu YH, Wu WT, Özçakar L. Comparative effectiveness of botulinum toxin injections and extracorporeal shockwave therapy for post-stroke spasticity: a systematic review and network meta-analysis. EClinicalMedicine 2022;43:101222.
2. Hsu PC, Wu WT, Han DS, Chang KV. Comparative effectiveness of botulinum toxin injection for chronic shoulder pain: a meta-analysis of randomized controlled trials. Toxins (Basel) 2020;12:251.
3. Wu WT, Chang KV, Chang HC, et al. Ultrasound imaging of facial vascular neural structures and relevance to aesthetic injections: a pictorial essay. Diagnostics (Basel) 2022;12:1766.
4. Chang KV, Chiu YH, Wu WT, Hsu PC, Özçakar L. Botulinum toxin injections for shoulder and upper limb pain: a narrative review. Pain Manag 2020;10:411-420.
5. Wu WT, Chang KV, Chang HC, et al. Ultrasound imaging of the facial muscles and relevance with botulinum toxin injections: a pictorial essay and narrative review. Toxins (Basel) 2022;14:101.

Multimodal ultrasound features of sclerosing adenosis of the breast: a case report

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To the Editor,

A 20-year-old woman presented to the department of general surgery for a breast tumor found by routine ultrasound examination. On physical examination, the nipples were not retracted, no breast mass was palpable, and no lymph nodes were palpable in the axilla.

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The scanning of the lesion was carefully performed using a PHILIPS EPIQ 5 with a linear array ultrasound transducer (eL18-4). Ultrasound images of the breast revealed the suspicious lesion, with the size of 12×9×8 mm, appearing with a not parallel orientation, irregular shape, angular and spiculated margin and small amount of peripheral blood flow at 12 o ‘clock in the right mammary gland (fig 1a), and was scored as BI-RADS 4A. Pulse Doppler ultrasound indicated relatively high resistance index (RI) of 0.77 (fig 1b). Elastosonography revealed the lesion with a color code pattern of central blue surrounded by green, indicating its moderate stiffness (fig 1c). Based on the spectrum of ultrasonic findings, breast malignancy was suspected initially. In contrast, the final pathology confirmed sclerosing adenosis (fig 1d).

Sclerosing adenosis (SA) involves the proliferation of the myoepithelium and epithelium originating in the terminal glandular lobules accompanied with desmoplasia and stromal fibrosis, and may clinically, radiologically, and pathologically simulate breast malignancy.

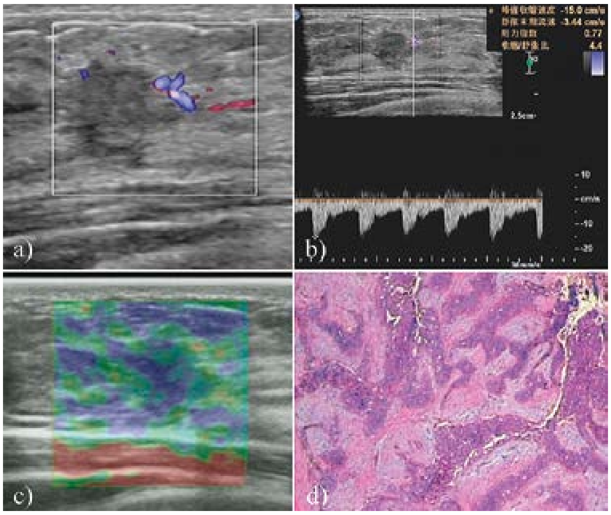

Fig 1. a) the suspicious lesion appeared with a not parallel orientation, irregular shape, angular and spiculated margin and small amount of peripheral blood flow, and was scored as BI-RADS 4A; b) pulse Doppler ultrasound indicated relative high RI=0.77; c) elastosonography revealed the lesion with a color code pattern of central blue surrounded by green, indicating its moderate stiffness; and d) the final pathology confirmed SA.

It is a benign, usually asymptomatic proliferative process that involves both the epithelial and the mesenchymal component of the breast, which poses diagnostic confusion with infiltrating lobular carcinomas and tubular carcinomas even in histological sections [1]. The lesion in our case report appeared with a small amount of peripheral blood flow and moderate stiffness, which was different from the breast malignancy. SA is a complicated entity that may present variable ultrasound features [2], so that awareness of the possible imaging features will enable sonographers to consider SA in the final diagnosis.

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Reference

1. Sreedharanunni S, Das A, Veenu S, Srinivasan R, Singh G. Nodular sclerosing adenosis of breast: A diagnostic pitfall in fine needle aspiration cytology. J Cytol 2013;30:49-51.
2. Liu W, Li W, Li Z, et al. Ultrasound characteristics of sclerosing adenosis mimicking breast carcinoma. Breast Cancer Res Treat 2020;181:127-134.