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Ultrasonographic and pathological findings of syringocystadenoma papilliferum in the skin

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To the Editor,

Syringocystadenoma papilliferum (SCAP) that develops either de novo or arise from a sebaceous hamartoma, is a rare benign adnexal neoplasm of the apocrine glands in the skin. Nevertheless, it carries a risk of malignant transformation, such as syringocystadenocarcinoma papilliferum, basal cell carcinoma, and squamous cell carcinoma [1]. Moreover, owing to its rarity, SCAP is often misdiagnosed or escape diagnosis as a neoplasm. Herein, we present a case of SCAP that was characterized by ultrasonography and confirmed by pathological analysis in a 30-year-old male.

The patient was admitted with a history of a painless mass for 2 years. Physical examination revealed that the neck mass was soft, well-defined, and approximately 50×30 mm in size. Superficial ultrasonography showed that the mass located in the skin dermis was an irregularly-shaped cystic-solid structure, with a well-defined margin (fig 1a) and small blood vessels inside papillary solid tissue (fig 1b). Following surgical excision of the mass, pathological examination confirmed that the mass was a SCAP demonstrating cystic invaginations extending downwards to the epidermis with papillary projections protruding into the lumen (fig 1c) that were covered by an inner layer of columnar epithelium and an outer layer of cuboidal cells (fig 1d).

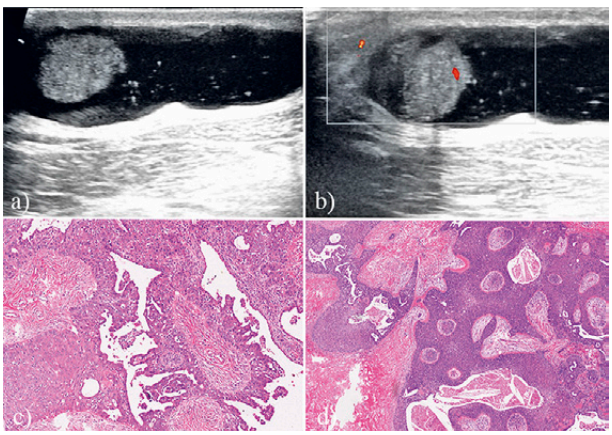


Fig 1. a) Grayscale ultrasonographic image showing an irregular-shaped, cystic-solid and well-defined mass in the dermis; b) Color Doppler flow image showing a few dot-like blood-flow signals inside papilla solid tissue; c) Hematoxylin-eosin staining showing the surface of the mass covered with squamous epithelium and papillary solid nodule in the cystic cavity. d) Hematoxylin-eosin staining showing cuboidal or columnar papillary solid nodule cells and palisade-like surrounding cells.

SCAPs are predominately observed in infants, children, and adolescents as one of the three following morphological types: linear, plaque, or solitary nodular. SCAP mainly occurs in the head and neck but occasionally appears in other regions of the body [2]. As cutaneous appendage tumors are always located in the dermis and changes in the epidermis are relatively mild, it is challenging to diagnose these tumors based on visual clinical features alone, although images of the skin could be helpful. However, compared with pathological features, the reports on findings with images of SCAP are extremely limited [3]. In our case, superficial ultrasonography showed an irregular-shaped, cystic-solid, and well-defined mass, with a few dot-like blood-flow signals inside papilla solid tissue. Yet, the evidence for

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differentiating SCAP from other similar skin tumors remains insufficient, thus requiring further research.

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ChatGPT's response to frequently asked questions about ultrasonography

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To the Editor,

Tech and info networks have brought convenience to our lives. Young people seek online health advice. ChatGPT, a language model using deep learning for human-like responses started to be used in medicine [1]. Due to the high level of specialization in ultrasound (US), the public has many questions and doubts. Therefore, we compiled the most frequently mentioned questions about US examinations from patients and used ChatGPT to provide answers, aiming to explore the accuracy of its responses.

We selected 10 common questions and queried the answers in ChatGPT, recording the generated responses. The answers were independently rated by experienced US experts on a scale of 0 to 10 (10 points: very accurate, 8 or 9: quite accurate, 6 or 7 points: average, <6 point: not accurate) (Supplementary table I, on the journal website). The average word count for each answer was approximately 151±54, indicating good readability. The average score was 8.4±0.7, indicating relatively high accuracy in the responses. However, unfortunately, none of the 10 questions received a perfect score.

The experts emphasized that ChatGPT's answers were not comprehensive and accurate enough in some questions, especially the average scores for Question 4 and Question 5 were low.

Question 4: Why are US images black and white instead of color? ChatGPT's answer was not accurate. Black and white US is based on modulating the brightness of light by the amplitude of the echoes, providing information on the anatomical structure through the brightness variations in the tissue section image. Color US, also known as color Doppler flow imaging, maps the blood flow velocity in a specific area as a pseudocolored image and displays it in real-time on a two-dimensional black and white US image.

Question 5: What is the difference between contrast-enhanced US (CEUS) and regular US? ChatGPT's answer was not accurate enough. Regular US uses US waves to scan the body and generate images based on the reflection of US waves from tissues. CEUS, on the other hand, utilizes the nonlinear effects and backscatter of contrast agents in the acoustic field to obtain contrast-enhanced images. It can provide information on blood perfusion to assist in further diagnosis [2].

We found that ChatGPT heavily relies on existing information and text, so if there have been recent studies

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or advances in a field, it may lead to outdated information. It lacks complex reasoning and may not understand specialized questions accurately, leading to incorrect answers. Our study focused on common US questions and may not cover all scenarios. Also, ChatGPT doesn't provide sources for information verification.

ChatGPT can provide users with some useful and relatively accurate information about US examinations. Although this knowledge may not be the latest, it does not mislead users. With the updating of texts, more accurate health information will be provided to users. However, it is still recommended to seek expert guidance when making significant decisions.

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Rare trichilemmal cyst localized in the pulp of the middle finger

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To the Editor,

A 42-year-old man discovered a mass in his middle finger of the right hand. Two years later, the mass gradually increased in size, accompanied by mild tenderness. According to ultrasound results (LOGIQ E9, GE healthcare), there was a 2.12×1.8×1.4 cm mass with low echogenicity in the pulp of the proximal and middle joints (fig 1a, b). The ultrasound indicated a suspicion of tendon sheath giant cell tumor (TSGCT). Following the surgical removal of the mass, a pathological examination revealed a cyst-like structure containing dense keratinized material but lacking a granular layer, which is consistent with the typical pathology of a trichilemmal cyst (TC) (fig 1c, d).

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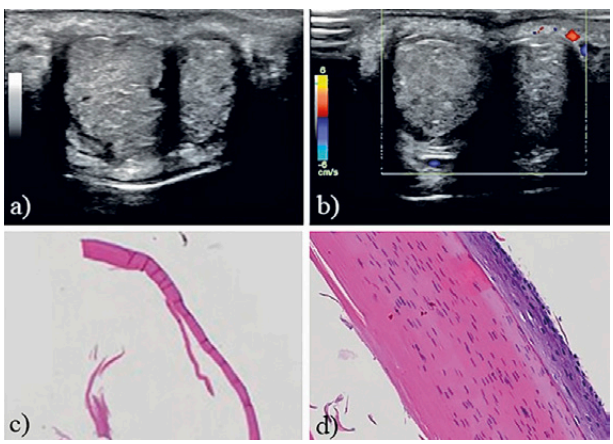


Fig 1. a) Ultrasound reveals an inhomogeneous hypoechoic echogenicity in the dermis with clear borders and enhanced posterior echogenicity; b) Doppler mode shows no flow signal in the lesion; c) Cyst-like structures were seen in the lower dermis (HE, x25); d) Stratified squamous epithelium was attached to the wall of the cyst, no granular layer was seen, and the contents were dense keratinized and hyperkeratotic material (HE, x200).

TC is an autosomal dominant benign subcutaneous lesion. Under the influence of trauma, inflammation, and other unknown causes, the hair follicle loses the inner root sheath, and the outer root sheath cells suddenly pro-

liferate and keratinize, culminating in the formation of a cyst [1]. TC usually occurs in hairy areas, most commonly on the scalp, and the mechanism of TC in follicle-free areas is unclear [2]. Two cases occurring under the nail on the dorsal aspect of the finger provide evidence to support the methyloplasmic origin theory that TC originates from methyloplasm keratinized into the outer root sheath [1,3].

Distinguishing TSGCT from TC based on ultrasound images alone can be challenging. However, TSGCT is more likely to occur on the palmar side of the finger and appears hypointense on T1- and T2-weighted magnetic resonance imaging (MRI) images due to the presence of hemosiderin [4]. In contrast to TC, internal calcifications and peritumor hyperechogenicity of pilomatricoma are more common, and the blood flow signal is more abundant. An epidermoid cyst is less likely to have internal calcifications or cystic degeneration compared to TC.

To conclude, TC that occurs on the pulp of the fingers could be linked to trauma. Ultrasonographers and clinicians must exercise caution when distinguishing between TC and TSGCT.

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Embryonal rhabdomyosarcoma of the uterine cervix

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To the Editor,

A 16-year-old nulliparous girl was admitted due to a protruding mass through the vagina, associated with yellow vaginal discharge. The mass appeared one-month prior to her presentation in the vaginal introitus, after defecation, with abnormal vaginal bleeding which stopped spontaneously after 3 days. She had a personal history of multi-nodular goiter. Vaginal examination found a long, unsmooth and polypoidal mass with focal hemorrhage. Transabdominal and trans-perineal ultrasonography revealed a hypoechoic tumor, connected to the cervix and extended to the external vagina, with dimensions of 6.6x3.8x2.6 cm, well-defined border and some small cysts inside (fig 1a). Color Doppler detected an artery entering the mass from the cervix and resistance index of 0.5 (fig 1b). She underwent a fertility-sparing procedure with local tumor excision. Intraoperatively, it was confirmed that the botryoid tumor was confined to the cervix and originated from the cervix. Pathological paraffin section after surgical resection found (fig 1c) at immunohistochemistry and genetic testing: Desmin+ (fig 1d), Myogenin+, MyoD1+, Myoglobin+, CD10+, CyclinD1+, and a few caldesmon+, Ck-P-, ER-, PR-, S-100-, Ki-67 (+,80%), TP53 wild-type expression and DICER1 gene mutation (E1813A); 23 HPV subtypes were negative.

A clinical stage IA of cervical embryonal rhabdomyosarcoma (ERMS) was diagnosed. The patient also received 6 cycles of VAC (vincristine, actinomycin, cyclophosphamide). Five months after surgery, the imaging studies, including chest X-ray, CT and US of the abdomen and pelvis, revealed no metastatic lesions.

ERMS is the most common subtype of rhabdomyosarcoma [1]. Among all rhabdomyosarcoma subtypes, most embryonal subtypes are localized and have a rela-

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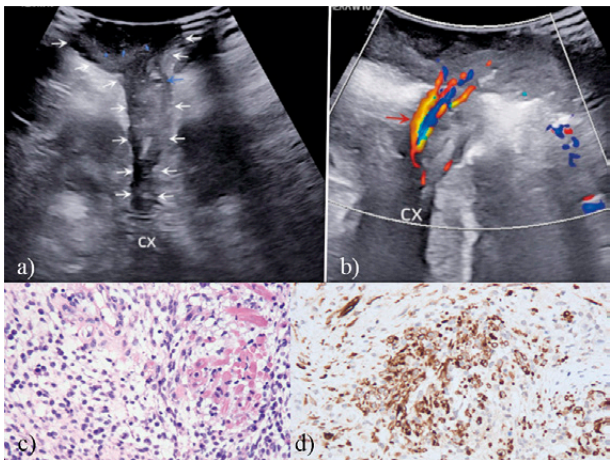


Fig 1. a) Gray scale ultrasonography showed a hypoechoic mass from the cervix (cx), gradually tapered and extended to the external vagina (white arrows). There were some cystic areas in the mass (blue arrows); b) color Doppler showed an artery entering the mass from the cervix (red arrow); c) postoperative pathology showed that the tumor is composed of small, spindled tumor cells (Hematoxylin and Eosin stain ×200); d) ERMS stained with Desmin antibody shows nuclear immunopositivity in most tumor cells (original magnification x200).

tively better prognosis [2]. As a rare malignancy tumor, DICER1-associated ERMS is related to TP53 gene alteration and occurs primarily in the first two decades of life [3]. A mass protruding into the vagina and abnormal vaginal bleeding are common complaints. Ultrasonography can show the size, composition (solid or cystic), anatomical relationship with surrounding tissues, and identify the blood supply of the tumor, which is important for later treatment.

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A new 3D volumetric ultrasound technique in the diagnosis of a double carotid web

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To the Editor,

A 73-year-old woman was admitted with intermittent chest and back pain for 1 week. She had a history of hypertension, coronary artery disease, diabetes mellitus, multiple cerebral infarctions, and carotid artery plaques, and had been taking aspirin and atorvastatin for several years. In this hospitalization, reexamination showed that the carotid artery had multiple plaques, the fibrous cap on the upper portion of the carotid bifurcation which was suspected to have posterior wall plaques in the past was not clear, and the web was merged with thrombus to be drained. After consultation, the bifurcation could be clarified to be a simple arterial web without merging with thrombus and plaques after multi-positional, multi-slice, and multi-angle scans. The plaque in the posterior wall of the internal carotid artery bulb was poorly visualized due to its high position. A new type of three-dimensional (3D) volumetric imaging was attempted to assist in the identification, and the 3D imaging showed a clear mem-

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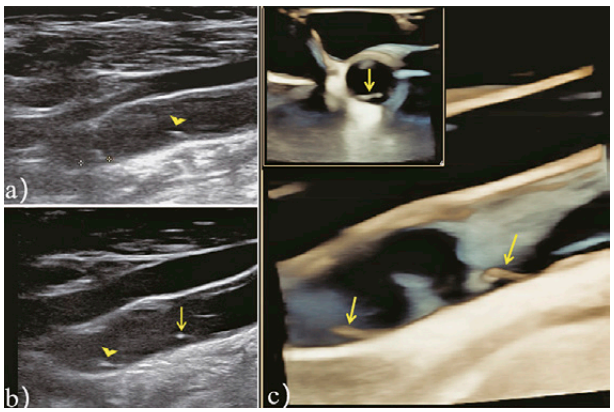


Fig 1. a) The junior physician still misdiagnosed the bulb one as a plaque, and the bifurcation appeared to be discontinuous due to linear echo in the upper portion; b) Both were webs after the consultation, with poor display under the web of internal carotid artery; c) The new 3D volumetric ultrasound showed slender web structures without sub-web thrombus, plaque, and no other abnormal echogenicity. Caliper: misdiagnosed as plaque, Arrowhead: web with non-excluded thrombus, Arrow: simple web

branous structure with good transmittance to the vessel wall, and no abnormal echoes such as thrombus or plaque were seen. Hence, the diagnosis of the simple arterial web was confirmed (fig 1).

Carotid web is an atypical intima-media type of fibromuscular dysplasia of the carotid artery, which is an underestimated cause of cryptogenic stroke. Even with antiplatelet therapy, there may be a high rate of stroke recurrence due to downstream surface nesting of thrombus along its hemopoietic arrest [1], which may explain the clinical tendency of patients to present with recurrent transient ischemic attacks or ischemic strokes. The carotid web is still poorly recognized clinically, and it is particularly critical to improve the understanding of carotid web.

The disease is easily missed or misdiagnosed as atheromatous plaque by conventional ultrasound. Conventional ultrasound has limitations and is dependent on experience, angle, position, size, and acoustic window, which makes it easy to misdiagnose atherosclerosis as plaque when it is combined with multiple plaques and there is a lack of understanding of the web. Secondly, it is also easy to misdiagnose web as a plaque when combined with sub-web artifacts caused by the angle of the acoustic beam; and even if the web is identified, the artifacts do not allow for the clarification of whether or not there is a combination of thrombus.

The new 3D volumetric ultrasound provides more objective diagnostic information than conventional ultrasound for arterial web, such as whether the web is combined with thrombus or plaque, thus greatly improving the accuracy of ultrasound diagnosis of carotid web, which is helpful for early clinical decision-making.

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Umbilical artery aneurysm at 35 weeks of gestation

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To the Editor,

A 30-year-old woman (G1P0) presented with frequent fetal movement at 35 5/7 weeks gestation. She had no significant medical history and underwent regular prenatal examinations. Previous ultrasound (US) examinations conducted in other hospitals were normal. However, the current US showed localized enlargement

of the umbilical cord (2.3x2.5x2.7 cm) near its insertion to the placenta (fig 1a), accompanied by numerous thin and weak dot-like echoes. The width of both ends and the umbilical artery continuation was about 0.29 cm and 0.21 cm, respectively. Color Doppler US demonstrated turbulent blood flow characterized by red and blue colors within the enlarged part of the umbilical artery (fig 1b) and pulse Doppler US revealed detection of arterial spectrum at the entrance of this enlarged segment (fig 1c). Despite being advised for termination, due to her refusal, it was decided to monitor fetal movements closely while planning for cesarean delivery after term without additional interventions.

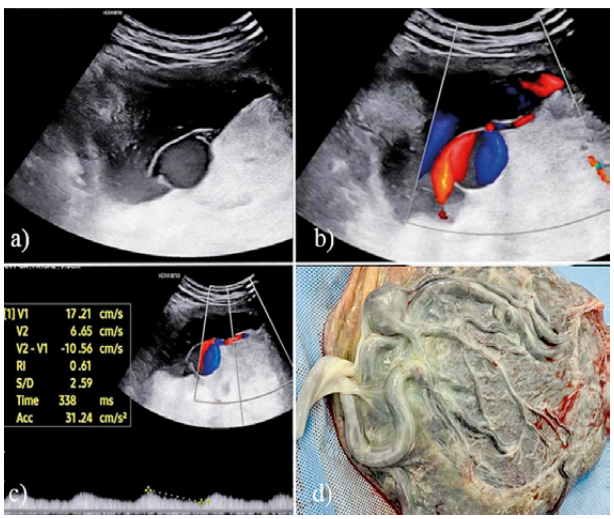


Fig 1. Grey scale ultrasound (US) image of Umbilical artery aneurysm (white arrow); b) Color Doppler US showed turbulent blood flow characterized by red and blue colors within the enlarged part of the umbilical artery (white arrow); c) Pulse Doppler US showed detection of arterial spectrum at the entrance of this enlarged segment; d) A gross specimen of the placenta showed the UAA located near the insertion of the umbilical cord into the placenta (red arrow).

At 38 6/7 weeks gestation, spontaneous rupture of membranes occurred, leading to admission for cesarean section delivery resulting in a female infant weighing approximately 3480 g. Examination of the placenta confirmed prenatal US diagnosis by revealing tumor-like dilation in proximity to where the umbilical cord inserts into it (fig 1d). Follow-up evaluations of the newborn baby conducted at the age of one month, three and six months indicated normal growth and development without any notable clinical manifestations.

Umbilical artery aneurysm (UAA) is a rare structural abnormality of the umbilical cord, with an incidence of 0.63% in single pregnancies [1] and is usually associated with fetal chromosomal abnormalities, fetal growth restriction, and intrauterine death. Currently, there is no clear guideline for UAA management [2]. Prenatal US can almost definitely diagnose UAA. When performing prenatal US examination, the sonographer should perform a comprehensive and careful scan of the umbilical cord. When UAA is found, several parameters should be described clearly including the location, size, presence of the umbilical vein compression, number of umbilical artery fetus, etc. All these parameters have important guiding value for clinical diagnosis and treatment of UAA.

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Ultrasound unveils deep radial nerve entrapment due to elbow capsule distension in a case with rheumatoid arthritis

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To the Editor,

A 66-year-old male with rheumatoid arthritis (RA) for more than 10 years was seen for right lateral elbow pain and weakness in finger extensions of the right hand for the past three months and was referred for ultrasound (US) examination. The extensor tendons were normal but massive effusion was present in the radial and coronoid fossae (fig 1A). When adjusting the transducer along the volar lateral elbow joint, it became evident that the deep branch of the radial nerve was distorted due to the distended joint capsule, with a remarkable enlargement of the nerve's proximal segment (fig 1B). Additionally, pivoting the transducer parallel to the supinator muscle, the finger and wrist extensor muscles over the painful elbow appeared thinner and hyperechoic (fig 1C) as compared to those on the asymptomatic side (fig 1D). Entrapment of the deep branch of the radial nerve with subsequent muscle atrophy was diagnosed.

The characteristic US findings in RA include synovitis, synovial hypertrophy, effusion, bony erosion, and tenosynovitis [1]. In our case, the absence of bony erosions suggested that the clinical condition was relatively well managed. However, it is important to note that even during remission, the presence of pannus within the joint cavity makes the joint susceptible to minor triggers, such as a sprain, which can prompt excessive effusion and result in joint distension.

The radial nerve at the elbow level branches into superficial and deep components [2]. The former provides

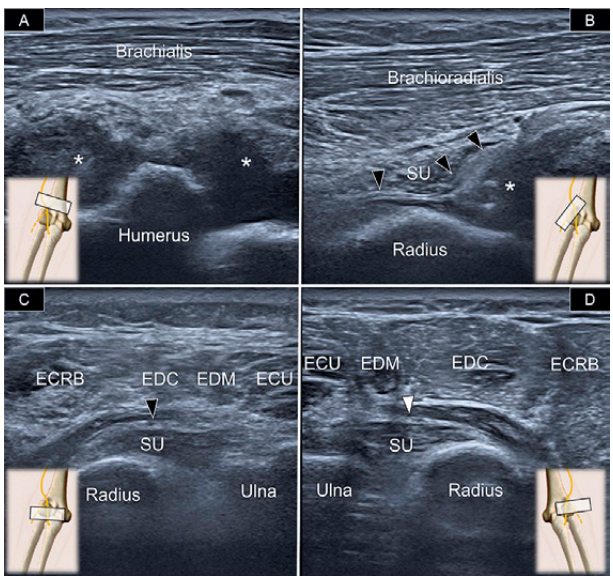


Fig 1. (A) There was a substantial effusion *(asterisk)* within the radial and coronoid fossae; (B) The deep branch of the radial nerve *(black arrowheads)* exhibited distortion due to the distended joint capsule, leading to significant enlargement of its proximal segment; (C) The extensor muscles of the fingers and wrist over the painful elbow appeared thinner and displayed increased echogenicity; (D) The unaffected side. SU: supinator muscle; ECRB, extensor carpi radialis brevis; EDC, extensor digitorum communis; EDM, extensor digiti minimi; ECU, extensor carpi ulnaris; *white arrowhead:* the deep branch of the radial nerve on the asymptomatic side.

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sensory innervation to the dorsal radial aspect of the wrist and fingers, while the latter supplies motor innervation to the posterior compartment of forearm muscles [3]. The deep radial nerve can be compressed at several locations [4], including the leash of Henry (where the recurrent radial vessels run across the nerve above the radial neck), the arcade of Frohse (located at the proximal edge of the superficial supinator muscle), and the exit of the supinator tunnel. In our case, entrapment occurred at the entrance to the arcade of Frohse, resulting from the altered course of the nerve due to the distended elbow joint capsule. Upon identifying the cause of entrapment, US-guided aspiration of elbow effusion, coupled with hydrodissection at the point of nerve entrapment [5], could be beneficial for relieving symptoms.

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Myocardial hypertrophy with aortic dysplasia: a rare case of Noonan syndrome

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To the Editor,

A 12-year-old girl presented with frequent sinus tachycardia for 2 years and chest pain for 3 days. Physical examination showed her height being 150 cm, weight of 36 kg, and body temperature of 36.8ºC, ptosis, short jaw, low set ears, neck girdle (fig 1a), chest deformity, and varus hands and feet (fig 1b). Electrocardiogram showed sinus tachycardia at 152 bpm with ST-T abnormality. Echocardiography revealed left heart enlargement, left ventricular wall thickening up to 14 mm at its thickest point, continuous interruption of the atrial septum 3.2 mm, aortic subvalvular septum (fig 1c), patent left ventricular outflow tract, slight dilation of the aortic sinus, and increased flow velocity in the aortic arch (fig 1d). Ultrasound diagnosis: left ventricular wall hypertrophy; aortic dysplasia; atrial septal defect. Genetic testing showed PTPN11 gene mutation. The patient was diagnosed with Noonan syndrome (NS). After admission, symptomatic treatment was given, the patient's symptoms improved, and she was discharged one week later.

NS is an autosomal dominant genetic disease with an incidence of 1/2500 ~ 1/1000 live births. The pathogenesis is related to the mitogen-activated protein kinase

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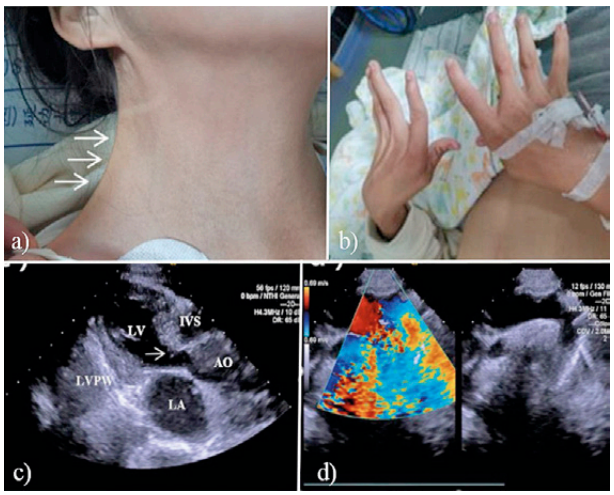


Fig 1. a) Neck girdle (arrows); b) Varus hands; c) Echocardiography shows left ventricular wall hypertrophy, aortic subvalvular septum (arrow) (LV: left ventricle, LA: left atrium, IVS: ventricular septum, LVPW: left ventricular posterior wall, AO: aorta); d) The sinus of Valsalva was slightly dilated, and the flow velocity of the aortic arch was accelerated with colorful blood flow.

signal transduction pathway [1]. The mutated genes associated with NS include PTPN11, SOS1, SOS2, KRAS, NRAS, RIT1, RRAS, RASA1, RASA2, MRAS, RAF1, BRAF, MAP2K1, MAP3K8, SHOC2, PPP1CB, SPRY1, LZTR1, MYST 4, A2ML1, CBL, ND4, and 20 others [2]. Among them, PTPN11 gene accounted for about 50%. The clinical diagnostic criteria are as follows: growth retardation, special facies, neck girdle, thoracic deformity, cryptorchidism, renal failure, etc. About 80% of the patients are associated with congenital heart disease, including pulmonary artery stenosis, atrial septal defect, and hypertrophic cardiomyopathy. In the treatment of this disease, in addition to surgery, recombinant human growth hormone (rhGH) is mainly used to promote the growth of patients. NS patients with PTPN11 gene mutation are more likely to have dilated cardiomyopathy, and rarely show myocardial hypertrophy. Our case, PTPN11 gene mutation NS patient with myocardial hypertrophy and aortic valve dysplasia is very rare in clinic. Therefore, when performing echocardiography, it is necessary to be alert to congenital heart disease caused by genetic factors, especially for some special types of patients.

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Ruptured primary omental ectopic pregnancy during the first trimester

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To the Editor,

An 18-year-old female, G0P0, presented to the emergency department with a 2-day history of minimal vaginal spotting and abdominal pain. The patient had regular menstruation; her last period being 8 weeks earlier.

Pelvic CT of referring hospital showed moderate hemorrhagic fluid and an irregular heterogeneous mass (fig 1a). Emergency ultrasound (US) revealed normal

uterus and bilateral ovaries, and a chaotic echoic mass of size 3.8x2.6 cm surrounded by mesenteric-like hyperechoic envelope (fig 1b). The serum β-human chorionic gonadotropin (β-HCG) level was 5508.4 mIU/mL. The patient underwent single-port laparoscopic surgery; an indigo-colored mass with dense adhesion to the greater omentum was observed above the uterus in the pelvic cavity (fig 1c), with a moderate amount of hemorrhage and blood clots. The appearance of the uterus and bilateral ovaries was normal, and both fallopian tubes were intact. The mass removal and a partial omentectomy was performed. Postoperative pathology revealed placental villous trophoblast in the omental fibro-adipose tissue (fig 1d), consistent with the diagnosis of primary omental ectopic pregnancy. The patient recovered well and was discharged 2 days later.

Abdominal pregnancy refers to the condition where the embryo or fetus is located within the abdominal cavity, outside of the fallopian tubes, ovaries, and broad ligaments [1]. Among the rare ectopic pregnancy sites that have been published, the most commonly reported EP implantation sites were the uterine serosa, the broad ligament of uterus, the liver and the greater omentum [2]. The serum HCG value and ultrasound examinations are the main tools for determining pregnancy and its location [3]. However, most abdominal pregnancies are easily missed or misdiagnosed and are only discovered during surgery or laparoscopic exploration. If the gestational sac ruptures and is surrounded by adherent tissues, the sonographic image may be atypical and easily confused with ruptured tubal pregnancy, corpus luteum rupture, ovarian cyst torsion or rupture, or inflammatory appendiceal mass.

When a patient presents with typical symptoms of an ectopic pregnancy and the images show normal appearance of reproductive organs, there should be a strong suspicion of an abdominal ectopic pregnancy.

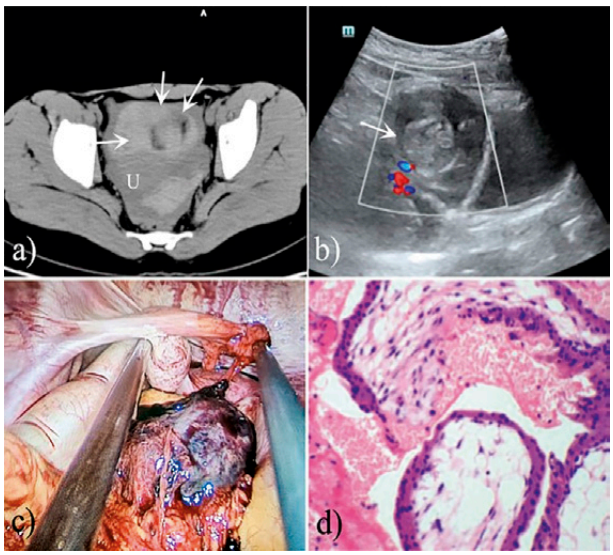


Fig 1. a) Non-contrast CT of the pelvis showed a 3.9x3.1 cm heterogeneous mass anterior to the uterus (white arrow), and moderate fluid collection; b) Ultrasonographic image at presentation showed the mass surrounded by a mesenteric-like hyperechoic envelope (white arrow); c) Intraoperative photo taken at the time of laparoscopy, showing primary omental pregnancy; d) Postoperative pathology revealed placental villous trophoblast in the omental fibro-adipose tissue. U: uterus.

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Multiple musculoskeletal abnormalities in a woman with breast cancer treated with aromatase inhibitor

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To the Editor,

A 48-year-old woman, affected by estrogen receptor-positive metastatic breast cancer was treated for 18 months with an aromatase inhibitor (Exemestane) and a gonadotropin-releasing hormone agonist (Decapeptyl). She had previously undergone breast therapy. Due to the presence of shoulder pain and swelling on the palmar side of the metacarpophalangeal (MCP) joint of the middle right finger during the previous month, she underwent a musculoskeletal ultrasound (US). The shoulder US showed a partial supraspinatus tendon tear and an exudative tensynovitis of the tendon of the long head of the biceps. The right hand US demostrated a hypoechoic nodule with defined margins and perinodular vascularity, that was superficially localized to the flexor tendons in the middle finger near the MCP joint. This nodule did not follow the sliding movements of the tendons and was diagnosed to be palmar fibromatosis (Dupuytren disease) (fig 1).

Palmar fibromatosis is a benign, superficial, proliferative process led by the proliferation of fibroblasts and myofibroblasts involving the aponeuroses associated with risk factors such as diabetes, smoking vibrational trauma and mediated by fibrogenic cytokines [1,2].

Our patient was a non-smoker, non-diabetic, housewife, and had never presented muscoloskeletal symptoms previously. Musculoskeletal symptoms such as bone loss, arthralgias, myalgias, and tenosynovitis have long been associated with the use of aromatase inhibitors [3,4] and recently an increased stiffness of tendons has been identified as a characteristic finding in these patients [5]. However, only a few reports in the scientific literature associate the use of these drugs with tendon tear [6] an none with the onset of palmar fibromatosis.

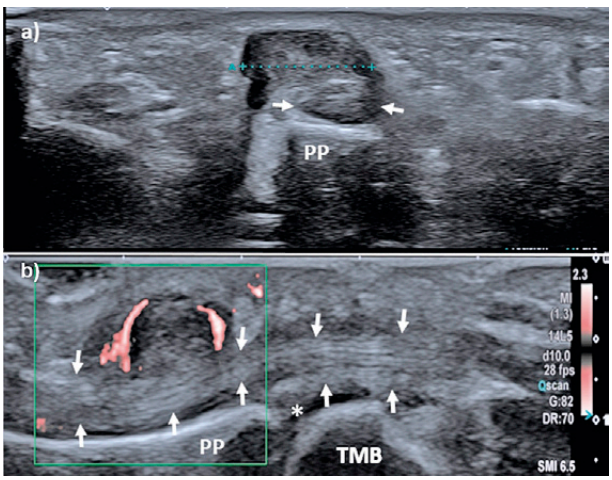


Fig 1. Ultrasonographic image obtained by placing the linear probe near the metacarpophalangeal joint (*) of the middle finger on the handheld hand surface: a) axial visualization of a hypoechoic nodule of 10.8 mm (between calipers) superficially localized to the tendons of the flexors (between white arrows); b) longitudinal visualization showing, after activation of superb microvascular imaging, the same nodule with perinodular vascularity, superficially localized to the tendons of the flexors (between white arrows). PP: proximal phalanx of the middle finger; TMB: third metacarpal bone.

This is the first case in which the association between the use of aromatase inhibitor and multiple musculoskeletal abnormalities, in particular the partial supraspinatus tendon tear and the development of palmar fibromatosis was observed.

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