as well as intralesional hyperechogenic dots without posterior acoustic shadowing that correlated with calcifications on histology. Kitamura et al.[5] previously described a case of SH with diffusely distributed intralesional hyperechogenic dots, some of which presented posterior acoustic shadowing, corresponding to calcifications on histology. These calcifications had been described earlier by Nakamura and Miyachi.[3] Those authors proposed a relationship between the presence of calcifications and time since lesion appearance and low intralesional flow, in agreement with the characteristics of the first case described here. In the second and third cases color Doppler mode revealed intralesional vascularization, a rare finding in these lesions[6,7] that histologically corresponds to vascular lumina. No calcifications were observed on histology and hyperechogenic dots were absent on ultrasound.

In conclusion, we present 3 cases of SH and describe the corresponding ultrasound and histological findings. In 2 of the 3 cases we observed marked intralesional vascularization, an uncommon feature in this type of lesion. Although ultrasound allows assessment of lesion vascularization and the relationship with adjacent structures, there are no distinctive ultrasound findings that enable diagnosis, which is fundamentally based on histological findings.

## Conflicts of interest

The authors declare that they have no conflicts of interest.

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# Subcutaneous Neck Lesion After Chiropractic Manipulation: The Role of Ultrasound Skin Imaging☆

## Lesión subcutánea cervical tras manipulación quiropráctica: papel de la ecografía cutánea

*To the Editor:*

Subcutaneous lesions often raise diagnostic doubts in the dermatological consultation and require a more specific approach. We describe a case in which skin ultrasound played a fundamental role in the diagnosis and management of a patient with a neck tumor.

The patient was a 20-year-old woman with no personal medical history of interest who was seen for a progressively growing tumor in the left cervical region that had appeared suddenly 1 week earlier, causing mild pain in the immediate area of the lesion. Physical examination revealed a subcutaneous lesion ($3 \times 2$ cm) with a gummy consistency, with no alteration in surface coloration and no epidermal involvement (Fig. 1).

The differential diagnosis included adenopathies, lipoma, intramuscular hematoma, and other subcutaneous tumors.

Given the diagnostic doubt, the patient underwent skin ultrasound with a 15–18-MHz linear probe (Esaote MyLab), which revealed the presence beneath the sternocleidomastoid muscle of a hypoechoic, oval structure ($2.8 \times 1.5 \times 1.4$ cm) with well-defined margins and a major axis in the longitudinal direction. Color Doppler mode showed an absence of intralesional vascularization and the presence of peripheral vascularization (Figs. 2 and 3). The ultrasound findings were compatible with an intramuscular hematoma.

In light of the ultrasound findings, we further investigated the medical history of the patient, who reported that she had visited a chiropractor 2 weeks earlier.

Ultrasound examination of the path of the carotid artery showed no abnormalities. Cervical computed tomography

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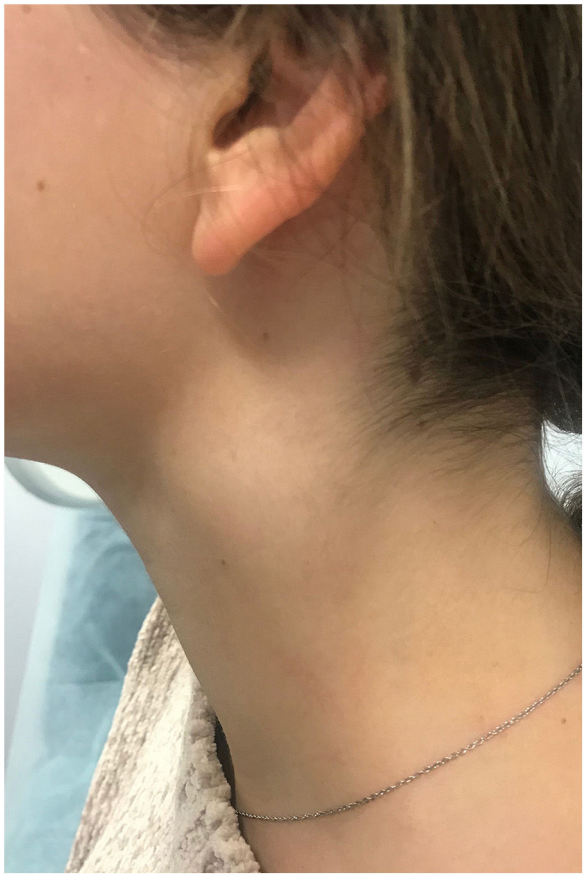

**Figure 1** Bulge in the left cervical region. Note the absence of skin surface involvement.

angiography revealed the presence of a hematoma, the radiological characteristics of which corresponded to our ultrasound findings. No alterations in the cervical vascular system were observed.

The patient was discharged to her home and was prescribed analgesia and rest. She improved gradually, achieving full resolution within 3 weeks.

Cervical hematoma after chiropractic manipulation is an uncommon complication,[1] but can be indicative of a major vascular complication. Indeed, there are multiple reports of dissection of the vertebral or carotid artery (pseudoaneurysm or intramural hematoma) in this context.[2,3] Assessment with imaging tests, analysis of risk factors (e.g., smoking, contraception), and study of the underlying disease (vasculitis, fibromuscular dysplasia, Ehler-Danlos syndrome, Marfan syndrome) is therefore mandatory in patients with cervical hematoma associated with major vascular complication.[4,5]

In the present case, the ultrasound differential diagnosis included lipoma, lymphadenopathy, and thrombosis. Lipomas show variable echogenicity and in some cases a characteristic hyperechogenic band. They tend to be located in the subcutaneous cellular tissue and have poorly defined margins. Lymphadenopathy is usually characterized by oval morphology with a hyperechoic center and a peripheral hypoechogenic halo. In the presence of inflammation an increase in volume and vascularization may be observed, although the general morphological and structural ultrasound features are retained. Thrombosis lesions are usually hyperechogenic, are located inside the vessels, and may present peripheral vascularization (recanalization). On ultrasound hematoma appears as a hypoechoic or anechoic structure, with no internal blood flow, although Doppler mode reveals peripheral vascularization,[6] as occurred in the present case.

Skin ultrasound is particularly useful in the diagnosis and monitoring of a wide variety of dermatological and nondermatological conditions. This may explain the exponential increase in recent years in the use of this technique, which has been incorporated into dermatology consultations.[7]

In conclusion, we present the case of a young patient with a cervical hematoma resulting from chiropractic manipulation, and emphasize the importance of considering additional tests given the possibility of associated cervical vessel involvement. Moreover, we wish to highlight the role of skin ultrasound in the diagnosis and management of this case, which could have involved more serious complications.

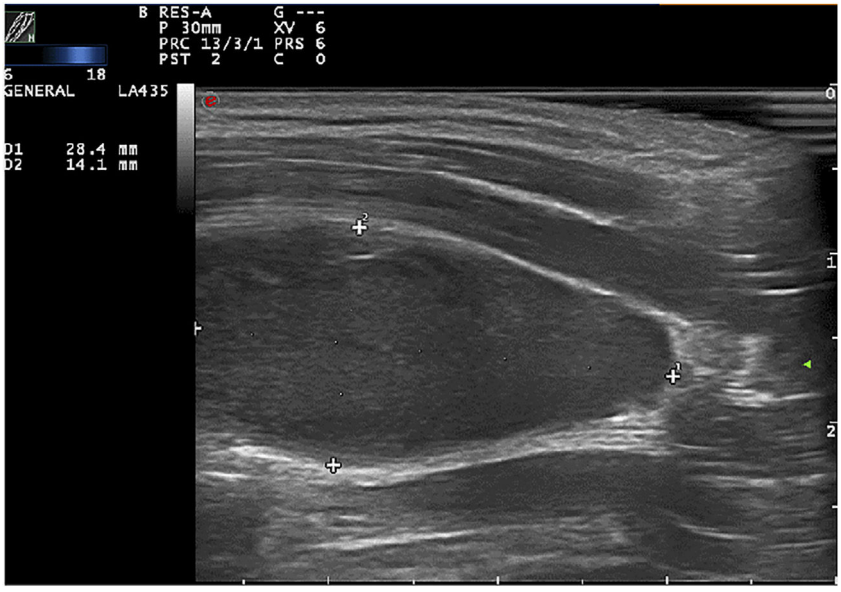


**Figure 2** B-mode ultrasound image of a longitudinal section showing an oval hypoechogenic lesion beneath the sternocleidomastoid muscle.

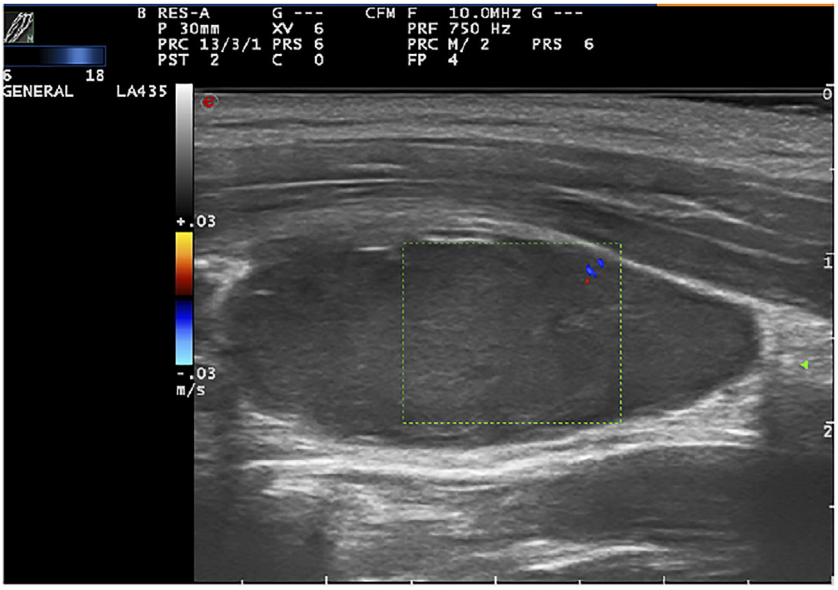


**Figure 3** Color Doppler-mode image of a longitudinal section showing an absence of intralesional flow.

## Conflicts of interest

The authors declare that they have no conflicts of interest.

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# Papular Epidermal Nevus With ''Skyline'' Basal Cell Layer: A Report of 3 New Cases☆

## Papular epidermal nevus with «skyline»: 3 nuevos casos

To the Editor:

Papular epidermal nevus with ''skyline'' basal cell layer (PENS) is a variant of epidermal nevus that presents as isolated keratotic papules of variable number and morphology. Histology reveals the following characteristic features: hyperkeratosis; rectangular acanthosis; a palisade basal cell layer; and a wide supranuclear cytoplasmic region that resembles the characteristic ''skyline sign'' described in Bowen disease. The presence of a wide acellular region just above the nuclei of the basal cell layer is typical.

In 2004 Tadini reported 2 cases of patients with papular epithelial hamartomas with associated neurological abnormalities. These cases were subsequently included in the *Atlas of Genodermatosis* as new neurocutaneous syndromes.[1] However, it was not until 2011 that the acronym PENS was proposed by Torrelo et al. in their series of 5 patients.[2]

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