

Although the embryogenesis of the anomaly remains under discussion, there is evidence that a primary defect in the initial division of the notochord, neurenteric canal, and paraxial mesoderm—with a persistent connection between the endoderm and ectoderm, causing division or deviation of the notochord—is associated with variety of malformations. Recent hypotheses are based on vascular impairment of the inferior neural structure, which would prevent the closure of the neural tube<sup>(2,6,7)</sup>.

Double spines and spinal cords can be observed in SNS and in caudal duplication syndrome, covering a wide spectrum of malformations, ranging from simple fibrous bands dividing the medulla to complete duplication of the caudal structures. A diagnosis of caudal duplication syndrome should be considered only when there is also duplication of vascular structures or organs, the genitourinary tract, the gastrointestinal tract, and the distal neural tube<sup>(8)</sup>.

Among individuals with SNS, the reported survival and prognosis are poor. Including the case reported here, there have been only five reports in which the patient survived. However, with the advances in surgical techniques and neonatal intensive care, there is a trend toward better outcomes<sup>(2)</sup>. The aim of this case report was to discuss the diagnosis of SNS, a rare condition, associated with congenital anomalies and high mortality. Therefore, we propose that, when spinal defects are detected, a detailed investigation of the associated findings be carried out, thus avoiding diagnostic errors and delays.

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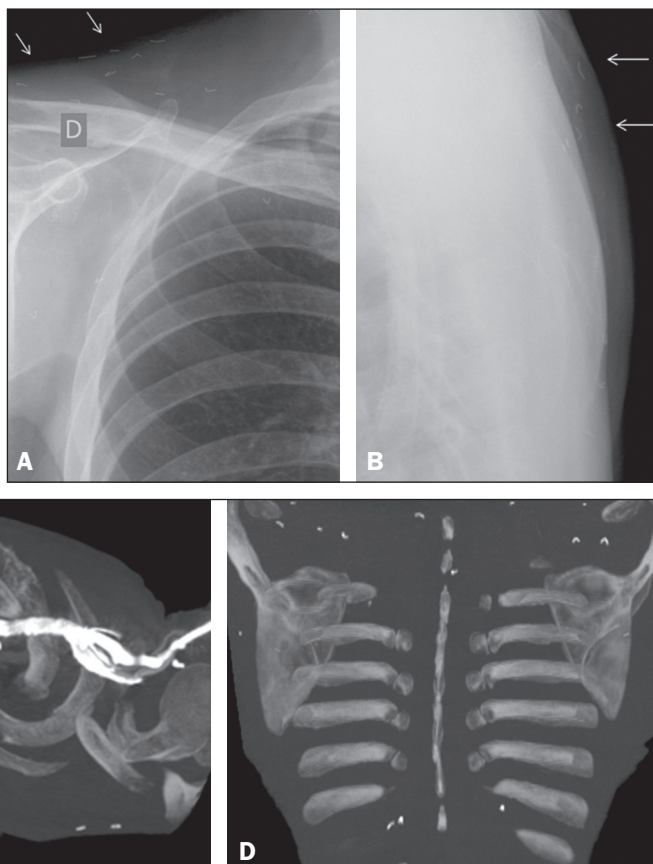
**Acupuncture needle fragments identified on X-ray and computed tomography studies of chest**

Dear Editor,

A 75-year-old male patient underwent chest X-ray and computed tomography of the thorax (Figure 1) for postoperative evaluation of myocardial revascularization. Small metallic objects were identified in the subcutaneous tissue of the back. The objects were similar in size but varied in form; some were linear and others had some degree of curvature. Those findings are consistent with acupuncture needle fragments.

Traditional Chinese acupuncture has been practiced for millennia. Approximately 40 years ago, it was introduced into medical practice in Brazil, where it is now widely used for the prevention and treatment of chronic pain. It consists in the insertion of needles into the subcutaneous tissue; the needles are left in place for up to 15 min, after which they are removed<sup>(1)</sup>. In some acupuncture modalities, the needles are inserted into the subcutaneous tissue and the protruding part of each is cut off; the remaining fragments are thus permanently maintained

in the tissue, providing continuous neurological stimulation<sup>(2)</sup>. The needles have a maximum diameter of approximately 1 mm and a maximum length of 1.5 cm<sup>(3)</sup>. The needles are preferably



**Figure 1.** Chest X-rays, in frontal and profile views (A and B, respectively), showing small metallic objects in the subcutaneous tissue of the back and supraclavicular region, with similar sizes and varied forms, some being linear and others having some degree of curvature. C,D: Axial positron emission tomography/computed tomography of the thorax, showing small objects, the density of which is consistent with metal, in the subcutaneous tissue, predominantly in the back.

made of gold, although they can be silver or stainless steel. The number of fragments varies and can be in the thousands.

In general, acupuncture needle fragments do not cause complications and appear as incidental findings on imaging examinations. They present as small, straight, curvilinear, or semi-circular objects, of similar sizes, and can be confused with metallic sutures or clips. Occasionally, these structures can form foreign body granulomas and can even migrate, especially in patients without much subcutaneous fat<sup>(4)</sup>.

Although rare, complications resulting from traditional Chinese acupuncture have been the subject of two systematic reviews<sup>(5,6)</sup>. When such complications are severe, they are usually attributable to improper manipulation at sites where there is a high risk of injury to the adjacent organs and structures, which can result in pneumothorax, cardiac tamponade, or spinal injury<sup>(5)</sup>. They can also be related to the incidental breaking of a needle, which requires surgical removal in some cases<sup>(6)</sup>.

A review of the literature on acupuncture needle fragments remaining in the body of patients identified 29 articles on the topic. Those articles describe fragments that have migrated to numerous sites, such as the urinary bladder, shoulder girdle, spinal cord, right ventricle, L5 nerve root, bulb, carpal tunnel, liver, pancreas, stomach, colon, lungs, and kidneys<sup>(7)</sup>. In cases in which the patients underwent surgery for the removal of the fragments, there were no major postoperative complications. Acupuncture has also been shown to increase bone activity on scintigraphy.

The true prevalence of acupuncture needle fragments remaining in the body is unknown. It is possible that the condition is underdiagnosed because many affected individuals never

undergo imaging examinations of the areas treated. Likewise, the prevalence of complications associated with acupuncture remains unknown. To date, there have been few studies of this specific topic. When acupuncture needle fragments appear as incidental findings on imaging examinations, they are regarded as a medical curiosity. Therefore, knowledge of their imaging aspects can be quite useful for radiologists.

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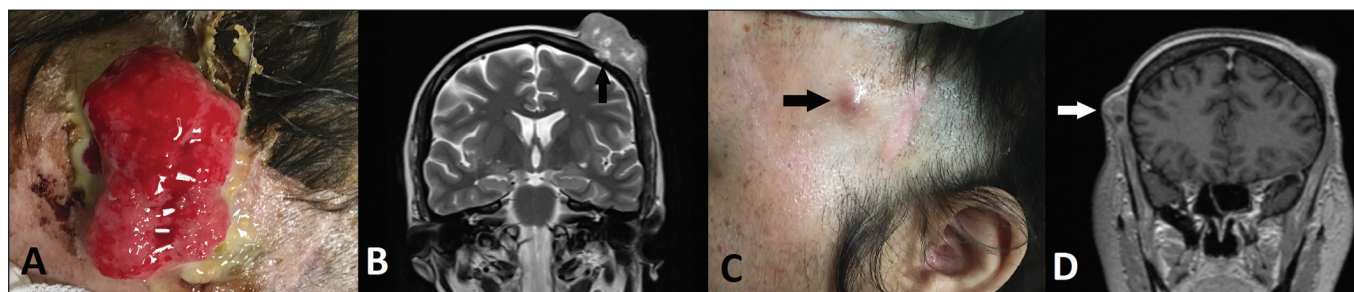
**Squamous cell carcinoma of the paranasal sinuses: cutaneous metastases with bone involvement**

Dear Editor,

In 2014, a 29-year-old female, diagnosed with squamous cell carcinoma of the floor of the frontal sinus, was submitted to surgical excision of the lesion and to radiotherapy. The following year, there was recurrence of the lesion, after which complete remission was not achieved. In 2016, she developed multiple vegetative, ulcerated lesions affecting the scalp, some provoking discrete bone involvement (Figures 1A and 1C). Magnetic resonance imaging (MRI) revealed expansile, heterogeneous lesions that showed predominantly hypointense signals in T1-weighted sequences and isointense or hypointense signals in T2-weighted sequences, with heterogeneous gadolinium enhancement and restricted diffusion (Figures 1B and 1D), aspects similar to those of the primary tumor. These findings, taken together with

the clinical history, were suggestive of secondary neoplastic involvement of the skin, which was confirmed by the histopathological study.

Recent studies in the radiology literature have emphasized the importance of MRI in improving the diagnosis of lesions of the head and neck<sup>(1–4)</sup>. Squamous cell carcinoma is derived from suprabasal keratinocytes. The incidence of the disease is highest in individuals between 50 and 70 years of age, and it affects men more often than women. Risk factors depend on the site, cigarette smoking and alcoholism being the main risk factors in cases of mucosal lesions, whereas the main risk factors in cases of cutaneous lesions are ultraviolet radiation, chronic ulcers, and fistulas. Among malignant neoplasms of the head and neck, squamous cell carcinoma is the most common, accounting for 5% of all cases of cancer<sup>(3)</sup>. The metastatic dissemination of such carcinomas is typically to the lymph nodes, although the lungs, bones, and liver can also be affected<sup>(5)</sup>.



**Figure 1.** A: Vegetative, ulcerated lesion affecting the scalp. B: Coronal T2-weighted MRI sequence showing an expansile lesion affecting the parietal region, with a predominantly isointense or hypointense signal, provoking discrete bone involvement (arrow). C: Synchronous vegetative lesion affecting the temporal region (arrow). D: Coronal T1-weighted MRI sequence showing a synchronous lesion, with heterogeneous enhancement, in the right temporal region (arrow).