Is it possible to align the teaching of radiology in undergraduate medicine with that employed in graduate and continuing medical education courses?

Dear Editor,

The correlation among clinical, radiology, and pathology is considered one of the most important elements of the medical science teaching/learning process, being widely used in the training of specialists not only in radiology and diagnostic imaging but also in several other fields of medicine; it also represents a basic tool for the construction of strategies aimed at continuing medical education, using the principles of interdisciplinarity and transdisciplinarity in education[1].

The ongoing changes in Brazilian medical education have created opportunities to redirect and rescale radiology instruction in undergraduate education, as well as in clinical and surgical specialization courses, with an impact on the training and continuing education of radiologists. This process has been influenced by studies demonstrating that shifting the focus of the teaching/learning process from the teacher to the students, together with the use of active learning methodologies and teaching techniques that favor the development of reasoning for problem-solving at all stages of medical education, has advantages for the restructuring of curricula and learning objectives, as well as for changing the mentality of instructors[1–7].

In undergraduate education, breaking down disciplinary walls allows the contents to be integrated, thus promoting the mobilization of knowledge and facilitating the understanding of physiopathology and radiological signs in each clinical context; however, most Brazilian medical schools still use the disciplinary structure, misaligned in relation to the integrative and multidimensional pedagogical strategies practiced by postgraduate programs where in-service teaching bridges the gap between theory and practice in health care provision, education, and management[1,2].

Although the correlation among clinical, radiology and pathology plays a central role in the teaching of diagnostic imaging at all stages of medical education, other relevant elements should be included in undergraduate and graduate education. Among those elements, the appropriate choice of complementary tests has become a critical point of medical training, because the poor use of diagnostic methods has a strong negative impact on patient care and places a burden on the health care system, whether public or private. It is important to develop an advantageous teaching strategy as a useful tool to counteract those inadequacies[1,2,4,6].

Therefore, it is possible to align the teaching of radiology to undergraduate medical students with that used in graduate and continuing medical education courses, anchoring the three stages in the correlation among clinical, radiology, and pathology. However, in the undergraduate stage, it is fundamental to adopt integrated curricula, regardless of the methodologies employed. It is also essential that questions regarding the rational use of diagnostic tools, including the appropriate way of requesting examinations as well as how to understand the text of the radiology report, should be continually examined, because progressive technological changes imply the adoption of new linguistic terms and procedures, which require periodic updating.

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Systemic lupus erythematosus with diffuse splenic calcifications: a rare combination

Dear Editor,

We report a case of 46-year-old white female with a history of systemic lupus erythematosus (SLE), diagnosed 19 years prior, who had previously been hospitalized for lupus myocarditis and class IV lupus nephritis. She was currently under treatment with hydroxychloroquine and prednisone. She reported sporadic arthralgia, with relief after analgesic use. She reported no history of infectious diseases. Transthoracic echocardiography revealed normal systolic and diastolic function, with mild aortic, tricuspid, mitral, and pulmonary valve regurgitation. Laboratory tests showed positivity for anti-double stranded DNA antibody and anti-single stranded DNA antibody, with a decreased CH50 (7 U/mL; reference range: 23.0–46.0 U/mL), C3 (47 mg/L; reference range: 90–180 mg/L), and C4 (< 6 mg/L; reference range: 10–40 mg/L). Urinalysis showed normal urinary creatinine (624 mg/24 h; reference range: 0.6–1.6 g/24 h) and elevated urinary protein (232 mg/24 h; reference range: < 150 mg/24 h). During the follow-up of the patient, an abdominal ultrasound was requested, and, during the examination, the spleen could not be visualized, although no other abnormalities. To rule out SLE-related systemic abnormalities, whole-body computed tomography was performed. The examination showed decreased spleen size, accompanied by small, diffuse, predominantly subcapsular and peripheral, nodular calcifications, some of which were confluent, with relative sparing of the central regions (Figure 1).

SLE is a chronic multisystem autoimmune disease, in which a variety of organs and tissues are damaged by pathogenic autoantibodies and immune complexes[1]. Abdominal involvement of SLE can occurs in virtually any organ within the abdominal

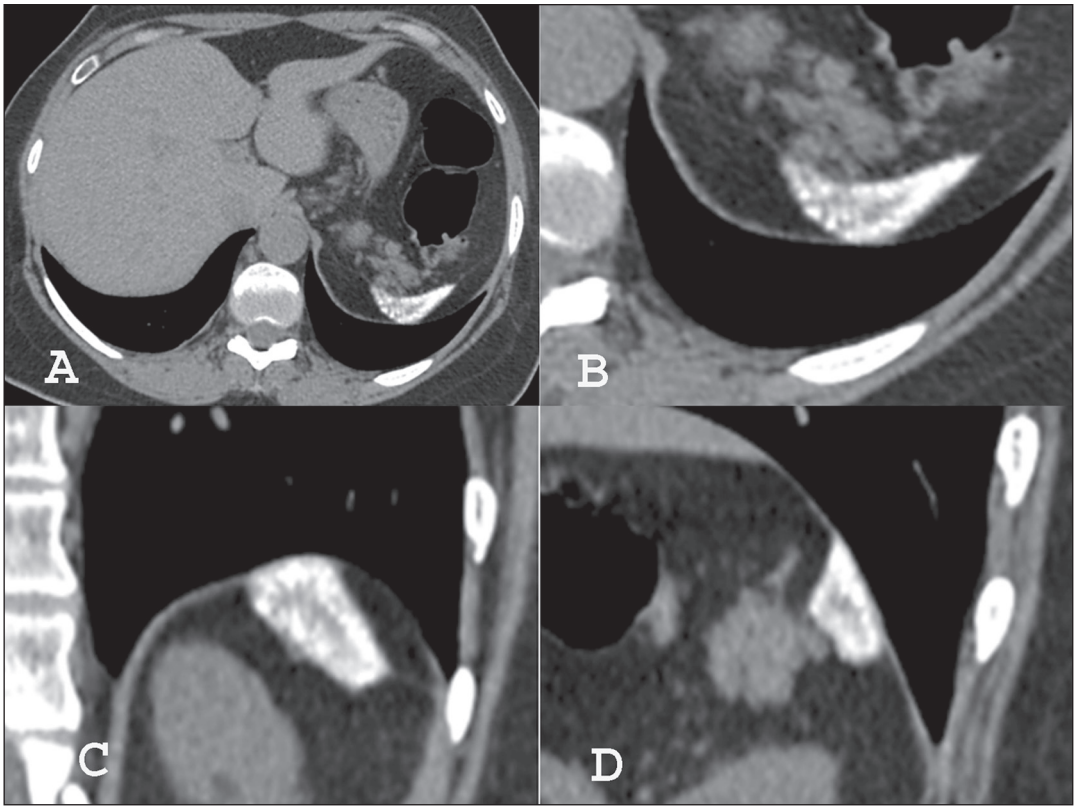

Figure 1. Computed tomography of the chest with mediastinal window settings (**A**) showing a decreased spleen size, accompanied by diffuse, small, predominantly subcapsular and peripheral, nodular calcifications, some of them confluent, with relative sparing of the central regions. Detail of the splenic region: axial computed tomography scan (**B**), with coronal and sagittal reconstructions (**C** and **D**, respectively), showing the characteristics of the splenic calcifications in more detail.

cavity (peritoneum, gastrointestinal tract, pancreas, kidney, adrenal gland, hepatobiliary tract, or spleen), although only renal involvement integrates diagnostic criteria[1]. Splenic involvement in SLE is rare. Splenomegaly, splenic infarcts, spontaneous rupture, functional asplenia, hyposplenism and periarterial thickening in an "onion-skin" pattern have all been reported in SLE patients[2,3].

Splenic calcifications have been described in a myriad of other diseases, including tuberculosis, histoplasmosis, brucellosis, amyloidosis, sickle cell anemia, anthracosilicosis, systemic sclerosis, and rheumatoid arthritis[3,4]. Based on the clinical history, physical examination, and laboratory findings, those potential causes of diffuse splenic calcifications were excluded in our case. Tieng et al.[4] proposed that diffuse splenic calcifications that are predominantly discrete, rounded, and small (although larger than the punctuate calcifications typical of granulomatous infections), as well as appearing to spare the capsule and subcapsular tissue, seem to be specific for SLE. This pattern may represent calcifications in the typical splenic "onion-skin" pattern (i.e., concentric deposition of collagen around the arteries in the spleen) in SLE[2–4]. Splenic microcalcifications could represent a late consequence of immune-mediated inflammation of arterial vessels[3].

In conclusion, we have reported the case of a female patient with decreased spleen size and diffuse small nodular calcifications, showing subcapsular and peripheral predominance, with relative sparing of central regions, an atypical distribution in comparison to cases of SLE-related spleen calcifications reported in the literature.

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Radicular compression syndrome after exercise in a young patient: not everything is a herniated disk!

Dear Editor,

A 34-year-old previously healthy man presented with a complaint of sudden-onset, progressive low back pain radiating to the lower limbs after running. The symptoms had begun three weeks earlier, with acute worsening during the last four days. The physical examination was normal except for mild lower left limb edema. A lumbosacral magnetic resonance imaging scan showed dilated vessels in the epidural space, intervertebral foramen, and anterior paraspinal space (Figure 1). Complementary