Post radiation evolution of giant virchow-robin spaces in a case of pituitary macroadenoma

Sir,

The term Virchow-Robin (VR) spaces or perivascular spaces is used to describe spaces around penetrating arteries containing interstitial fluid and which are lined by pial cells. They are most commonly located in the region of the lenticulostriate arteries in basal ganglia, along perforating arteries in high frontal region and in the brainstem around the midbrain. Most are <1 cm in size and those more than 1.5 cm are termed as giant VR spaces. On imaging, they are seen to have sharp thin margins, normal brain parenchyma surrounding it, following cerebrospinal fluid density and showing no postcontrast enhancement.[1,2] They are primarily asymptomatic but are known to be associated with presentation in the form of headache, dizziness, dementia, syncope, seizures, etc. The precise etiology of these lesions is not well known. No previous association of giant VR spaces with prior exposure to radiation has been reported in the available literature.

A 45-year-old gentleman presented to our institute in 2002 with complaints of large joint pains, joint swelling, coarsening of facial features, and hoarseness of voice of 2 years duration. On clinical, biochemical, and imaging evaluation, he was diagnosed to have a pituitary adenoma, secreting growth hormone. He underwent trans-sphenoidal surgery in 2002 and was on clinical and imaging follow-up when recurrent lesion was noted in 2007. He underwent a second surgery in 2007 and was advised postsurgical radiotherapy, which he initially declined. He was continued on follow-up and in 2011 he underwent radiotherapy for the residual lesion. Since then he has been on conservative clinical and imaging follow-up and remains asymptomatic.

Follow-up imaging done in 2016 [Figure 1] revealed giant VR spaces in their typical location in bilateral basal ganglia region with normal surrounding parenchyma without postcontrast enhancement or mass effect. On review of the previous available images in the form of magnetic resonance imaging (MRI) done in 2002, 2008, 2010 and computed tomography done in 2004, no evidence of prominent VR spaces was seen. The long follow-up period of 8 years prior to radiation was unremarkable but in 5 years after radiation the patient developed these cystic lesions. This temporal evolution of findings with history of exposure to radiation in the interim lead us to hypothesize the possibility of association of these newly evolved giant VR spaces to radiation exposure. Such an association has hitherto not been reported in the literature. White matter changes following radiation has been well documented in the literature and cystic changes have also encountered on long follow-up.[3-5] However, correlation with evolution of VR spaces has not been suggested. We hypothesize that the dilated VR spaces seen in our case could be a finding due to postradiation white matter atrophy, and the temporal profile of evolution of MRI findings supports this hypothesis.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

Manoj Gopinath, Chinmay Nagesh, Chandrasekhar Kesavadas
Department of Imaging Sciences and Interventional Radiology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India
E-mail: mangof2@rediffmail.com
References


Impact of revised Atlanta classification of acute pancreatitis on generation of a score employing modified CT severity index

Sir,

We read with great interest the article titled “Severity assessment of acute pancreatitis using CT severity index and modified CT severity index: Correlation with clinical outcomes and severity grading as per the Revised Atlanta Classification” by Sahu et al. published in the April–June 2017 issue of the Indian Journal of Radiology and Imaging.

[1]

The manuscript is highly informative. We, however, would like to make the following pertinent observations.

One of the principal aims of the present study [1] was to calculate the degree of concordance between the CT scoring indices and the clinical grading as per the Revised Atlanta Classification for Acute Pancreatitis. The former included CT Severity Index (CTSI) and Modified CT Severity Index (MCTSI), both of which generate a score based on CECT findings, thus, stratifying acute pancreatitis (AP) as mild, moderate, or severe. Revised Atlanta Classification for Acute Pancreatitis revolutionized the management of AP by simplifying clinical as well as morphological classifications and coining newer nomenclature for radiological findings to bring in more objectivity.

[1,2] Naturally, calculation of CT scoring indices, for e.g., MCTSI on the basis of newer terminology may alter the final score. For example:

a. Revised Atlanta Classification for Acute Pancreatitis considers any intrapancreatic collection straightaway parenchymal necrosis, [2] which is in strong disagreement with the older terminology used to compute MCTSI. [3] The latter grades intrapancreatic collection and parenchymal necrosis as two separate entities. [3] Hence, MCTSI as per the latter (the older terminology) would be 2 or 4 (depending on the percentage of necrosis whether more than or less than 30%), while the former would generate a score of 4.

b. The nomenclature of fat islands in peripancreatic collections is yet another point of disagreement. [3] While older terminology used to calculate MCTSI considers it as acute fluid collections without necrosis, [3] revised terminology labels it to be acute necrotic collection (in acute stage). [2] The present study defines the CT parameters as per the Revised Atlanta Classification for Acute Pancreatitis. [1] However, MCTSI, if computed using the recent classification, may yield a different score compared to when calculated as per the older terminology. Hence, it would be of enormous help if the authors could clarify our doubts.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.