Finding of Isolated Agenesis of the Septum Pellucidum in Neurotrauma: Report of an Unusual Case

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Isolated agenesis of the septum pellucidum (IASP) is an extremely rare developmental anomaly, often associated with congenital brain defects. Few cases have also been described in association with schizophrenia, language disorders, or behavioral problems. It is noteworthy that almost all cases of IASP have been diagnosed during the first year of life.[1]

A 31-year-old woman was evaluated following a traffic accident, with direct trauma to the frontal region, without loss of consciousness or scalp laceration. She reported frontal headache, mild dizziness, and nausea. She had always been in good health, with no history of chronic, neurological, or psychiatric illnesses. Initial evaluation showed a normal neurological physical examination and a Glasgow Coma Scale score of 15 points. She was referred to the imaging department where a noncontrast brain computed tomography (CT) scan (►**Fig. 1**) was performed, showing no signs of skull fractures, cerebral contusion, epidural hematomas, or posttraumatic subarachnoid hemorrhage. However, both coronal and axial views detected the absence of the SP. The results were discussed with the patient, and a magnetic resonance imaging (MRI) study was decided to confirm the CT findings. ►**Fig. 2** shows the agenesis of the SP in different views and sequences.

Although Turner, in 1878, was the first to observe the anatomical absence of the SP in association with other encephalic anomalies, it was Tenchini in 1880 who made this isolated finding. The next case was described in 1925 by Hochstetter, who had already seen the absence of the SP in well-formed animal brains and human fetuses.[2]

The reported incidence of SP agenesis is around 2 to 3 per 100,000 live births.[3,4] The absence of the SP has always been associated with other anomalies; therefore, it had been concluded that its absence could provide a valuable clue for diagnosing brain malformations.[1] However, other researchers suggest that the absence of the SP may be an isolated finding.[3] By 1994, only 12 cases appeared in the literature. In 2002, Cihangiroglu et al noted that almost all IASP cases had been diagnosed during the first year of life and, to their knowledge, had never been reported in adults.[4]

Supprian et al hold forth that IASP could be part of a continuum of developmental disorders in prosencephalic structures. It remains to be determined whether its isolated absence may be associated with histological changes or cytoarchitectural aberrations that currently cannot be detected by MRI.[3] Belhocine et al, in a study of 34 cases of

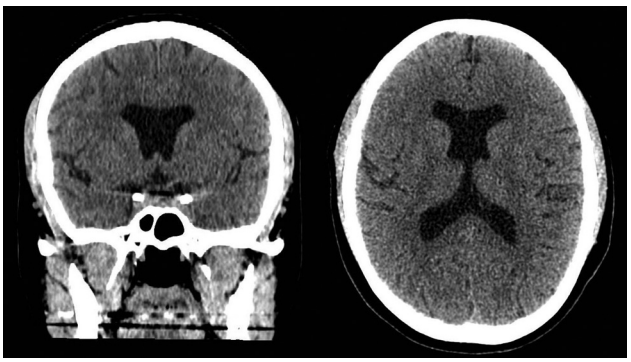

Fig. 1 Coronal (left) and axial views (right) of noncontrast brain computed tomography (CT). Both show the absence of the septum pellucidum (SP) and the confluence of the anterior horns of the lateral ventricles. No other morphological abnormalities were observed.

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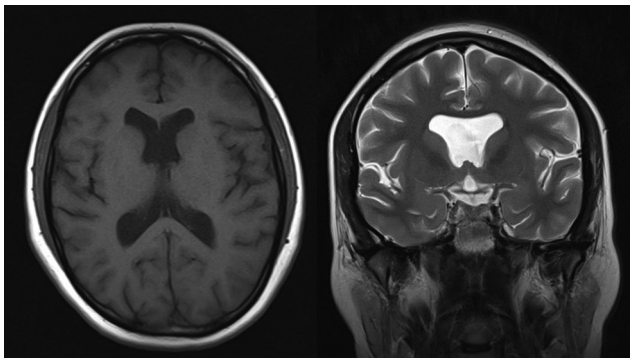

Fig. 2 Axial (left) T1-weighted and coronal (right) T2-weighted images of brain magnetic resonance imaging (MRI). Both show the absence of the septum pellucidum (SP) and the confluence of the anterior horns of the lateral ventricles. No other morphological abnormalities were observed.

SP agenesis diagnosed by MRI, highlight the extreme rarity of its isolated and asymptomatic presentation.[5]

Although there is still a lack of information on the long-term neurological and cognitive development in newborns with IASP, it has been suggested that many may present variable and persistent neurological deficits. However, our patient illustrates that it is possible to diagnose IASP in asymptomatic adults as an incidental finding during imaging evaluation due to neurotraumatic events.[4]

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Conflict of Interest
None declared.

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