*The Canadian Journal of Neurological Sciences* (2026), 1–2
doi:10.1017/cjn.2025.10513

Canadian Journal of Neurological Sciences
Journal Canadien des Sciences Neurologiques

## Neuroimaging Highlight

# Sellar Spine: MRI-Based Recognition of a Rare *Congenital* Anomaly

Sevinc Isazade[1], Cansu Sarıkaya[2] and Mustafa Kemal Demir[3]

[1]Clinic of Neurology, Goztepe Medical Park Hospital, Istanbul, Turkey, [2]Department of Neurology, Bahcesehir University Goztepe Medical Park Hospital, Istanbul, Turkey and [3]Department of Radiology, Istinye University School of Medicine, Goztepe Medical Park Hospital, Istanbul, Turkey

**Keywords:** sella turcica; sellar spine; MAGNETIC RESONANCE IMAGING; developmental anomaly; pituitary abnormality

(Received 4 November 2025; final revisions submitted 22 November 2025; date of acceptance 19 December 2025)

A 30-year-old woman presented with headache and blurry vision. The neurological examination findings were unremarkable. MRI of the sella revealed a midline, well-defined osseous structure located posterior to the pituitary gland. On axial, inverted axial and coronal T2-weighted images, the lesion appeared isointense to the bone, tapering anteriorly from the dorsum sellae toward the posterior pituitary gland (Figure 1A–C). On unenhanced coronal and sagittal T1-weighted and inverted sagittal T1-weighted images, the lesion exhibited a signal intensity identical to that of the bone within the posterior pituitary region, maintaining direct continuity with the dorsum sellae (Figure 1D–F). No enhancement was observed on post-contrast T1-weighted sequences (Figure 2A,B). The osseous nature of the lesion and its continuity with the dorsum sellae were clearly delineated on the sagittal post-contrast T1-weighted images (Figure 2A). Based on these MRI findings, a diagnosis of sellar spine was suggested. A computed tomography of the sella turcica confirmed the presence of an osseous lesion, originating from the midline of the anterior surface of the hypertrophic dorsum sellae (Figure 3). Given the presence of a sellar lesion, the patient was referred to an endocrinologist for further evaluation and management. Clinical examination and review of the systems revealed no evidence of endocrine dysfunction. Laboratory assessments revealed normal pituitary hormone levels. The patient's visual complaint was attributed to elevated intraocular pressure, which was identified during ophthalmological evaluation and resolved with medical therapy.

The sellar spine is a rare osseous anomaly that arises from the midline of the lower anterior dorsum sella and protrudes into the pituitary fossa, representing the ossification of the cephalic remnant of the notochord.[1] Its reported incidence ranges from one in 5000 to one in 8000.[1,2] Although most cases are discovered incidentally without clinical significance, the sellar spine has occasionally been associated with hypopituitarism, galactorrhea, visual disturbances, or headache.[3–6] Postnatal growth of the sellar spine has also been reported and may account for its occurrence in adolescents and adults.[7] Classically, the sellar spine appears as a bony spur arising from the dorsum sella, extending anteriorly and

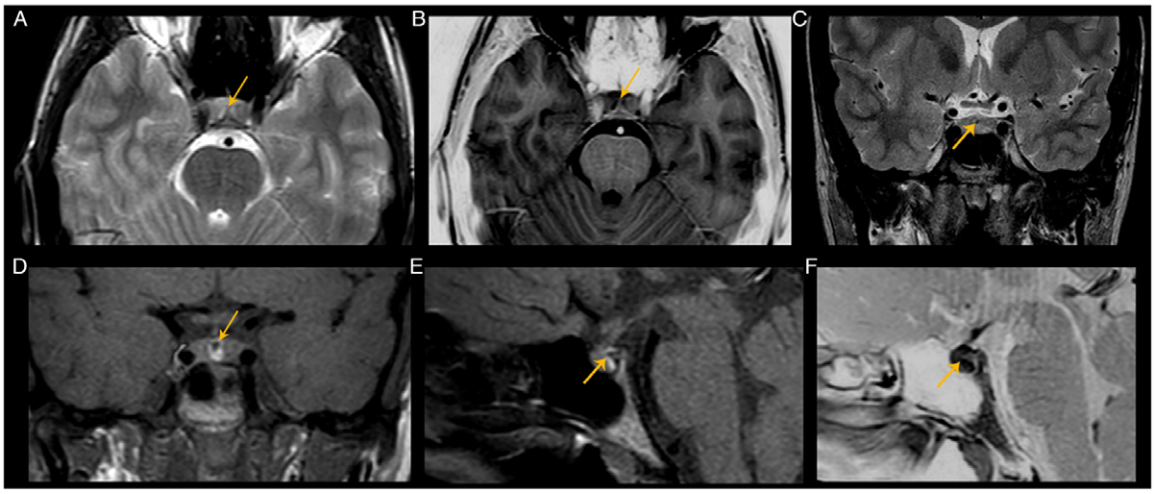



**Figure 1.** Unenhanced MRI of the pituitary gland. **(A)** Axial, **(B)** inverted axial, **(C)** coronal T2-weighted and **(D)** coronal, **(E)** sagittal, **(F)** inverted sagittal T1-weighted images demonstrate the sellar spine as a lesion with signal intensity identical to bone, tapering anteriorly from the dorsum sellae toward the posterior pituitary gland (arrows).

**Corresponding author:** Mustafa Kemal Demir; Email: demir.m.k@gmail.com

**Cite this article:** Isazade S, Sarıkaya C, and Demir MK. Sellar Spine: MRI-Based Recognition of a Rare *Congenital* Anomaly. *The Canadian Journal of Neurological Sciences*, https://doi.org/10.1017/cjn.2025.10513

© The Author(s), 2026. Published by Cambridge University Press on behalf of Canadian Neurological Sciences Federation.

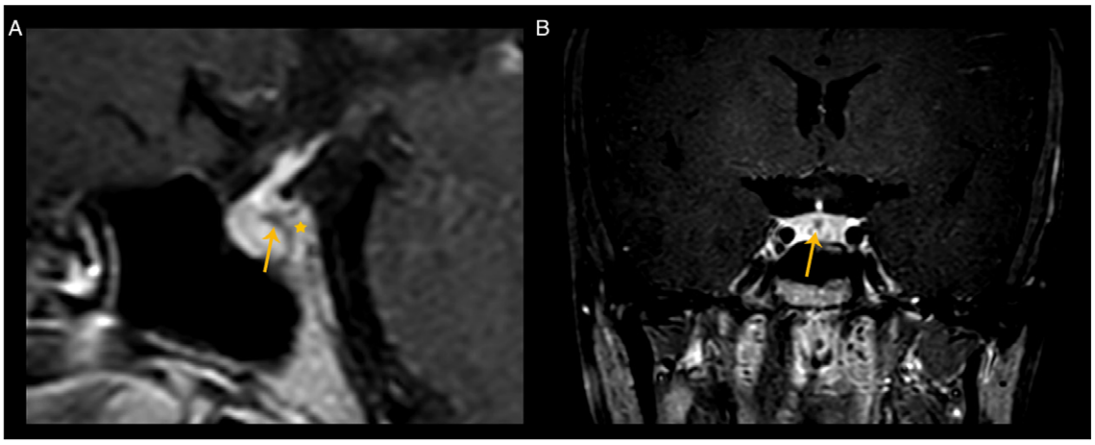



**Figure 2.** Gadolinium-enhanced MRI of the pituitary gland. **(A)** Sagittal and **(B)** coronal T1-weighted images demonstrate no enhancement in the sellar spine (arrows) and clearly delineate the osseous nature of the lesion and its continuity with the hypertrophic dorsum sellae (star).

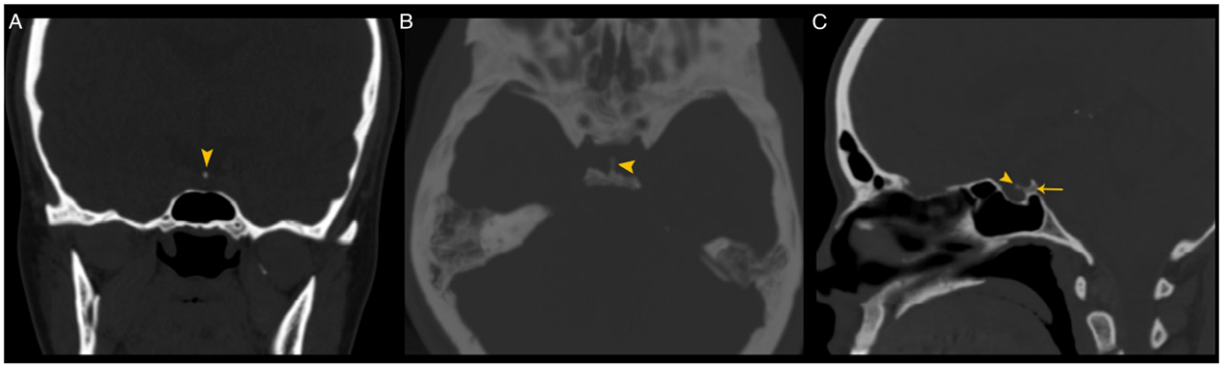



**Figure 3.** Bone-window coronal reformatted **(A),** axial 3D volume rendered **(B)** and sagittal reformatted **(C)** CT images of the sella turcica demonstrate the sellar spine as a bone spur (arrowheads), arising from the midline of the anterior surface of the hypertrophic dorsum sellae (arrow).

slightly upward toward the pituitary fossa. On imaging, it usually presents as a compact bone structure that is hypointense on both T1- and T2-weighted MRI sequences; however, depending on its marrow content, it may show hyperintense signals.[1–6,8] The lesion was midline, osseous in signal intensity and directly continuous with the hypertrophic dorsum sella, which are key diagnostic features distinguishing the sellar spine from pituitary or parasellar masses. The absence of contrast enhancement and the identical signal to the dorsum sella confirmed its benign, bony nature. Inverted T1- and T2-weighted images were particularly helpful in delineating the osseous configuration and its continuity with the dorsum sella. Because pituitary evaluations are most often performed using MRI, awareness of these characteristic imaging features is crucial. Recognition of a midline, nonenhancing osseous lesion with a signal identical to the hypertrophic dorsum sella on both conventional and inverted MRI sequences with additional CT images allows accurate diagnosis of sellar spine and prevents further clinical and laboratory investigations or surgical intervention.

**Author contributions.** **MKD** – Writing – original draft, visualization, validation, supervision, software, resources, methodology, investigation, formal analysis, data curation, and conceptualization.

**SI, CS** – Writing – original draft, visualization, resources, project administration, methodology, investigation, formal analysis, and data curation.

**Funding statement.** None.

**Competing interests.** None.

**Ethical standards.** Not required.

## References

1. Ambrosetto P, Frank G, Brayda G, Busacca M. CT and MR of the sellar spine. *Neuroradiology*. 1991;33(5):465.
2. Dietemann JL, Lang J, Francke JP, Bonneville JF, Clarisse J, Wackenheim A. Anatomy and radiology of the sellar spine. *Neuroradiology*. 1981;21(1):5–7.
3. Abs R, Van Breusegem L, Verhaert G, Smet H, Parizel PM. Intrasellar bony spine, a possible cause of hypopituitarism. *Eur J Endocrinol*. 1995;132(1):82–5.
4. Chivukula S, Everson R, Linetsky M, et al. Challenging diagnosis and surgical management of a symptomatic sellar spine. *World Neurosurg*. 2016;91:669.e7–669.e10.
5. Demir MK, Toktaş ZO, Kılıc T. Sellar spine: a rare osseous anomaly. *Acta Neurol Belg*. 2021;121(2):571–2. DOI: 10.1007/s13760-020-01457-5.
6. Orr A, Braunreiter C, Keefe C, Christy M, Betz BW. Pituitary sellar spine in a pediatric patient with diabetes insipidus. *Clin Imaging*. 2020;69(145):147.
7. Hosokawa T, Yamada Y, Sato Y, Tanami Y, Kurihara J, Oguma E. Postnatal sellar spine growth: a case report and literature review. *Medicine (Baltimore)*. 2016;95(33):e4579. DOI: 10.1097/MD.0000000000004579.
8. Radmanesh A, Young MG. Case 299: sellar spine. *Radiology*. 2022;302(3):724–8. DOI: 10.1148/radiol.203443.