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RESEARCH ARTICLE

SEQUENTIAL MRI OF THE PITUITARY IN SHEEHAN SYNDROME

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ABSTRACT

Sheehan's syndrome (SS) or postpartum hypopituitarism is a rare condition due to the necrosis of the pituitary gland. More often, this is caused by acute hypotension or hypovolemia related to excessive haemorrhage with or after delivery. The following article sheds light on the evolution of pituitary changes and also tackles the differential diagnosis involving Sheehan syndrome by means of MR imaging in a female patient after caesarean delivery.

INTRODUCTION

Sheehan's syndrome (SS) is the consequence of ischemic pituitary necrosis because of severe postpartum haemorrhage and possible thrombosis, vasospasm and vascular compression of the hypophyseal arteries. This condition might be a potential cause of hypopituitarism from the very beginning or within few years later on, depending on the extent of the damaged tissue (Laway, 2011; Sert, 2003; Kelestimur, 2003). Imaging findings on pituitary showed an enlargement of the pituitary gland and then an atrophy of it. This was demonstrated by small sella size (Kelestimur, 2003; Vaphiades, 2004; Molitch, 1998). As an instance in this report, we had a patient with Sheehan syndrome where the development of pituitary gland changes was evaluated using sequential MR imaging.

CASE REPORT

A 35-year-female patient, gravida 1 para 0, who had no family or medical history nor did she suffer any issues during her pregnancy process, had been subject to a low transverse caesarean section at term. The surgery process was complicated by post partum haemorrhage with as well as disseminated intravascular coagulation. Therefore, it was a must to send the patient to an intensive care unit so that she benefitted from units of platelets, Blood and fresh frozen plasma. The investigations showed hypocortisolism. A cranial MRI procedure revealed a cystic pituitary increased in size, potential for infarct with a larger sella and peripheral rim enhancement (Figure 1).

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Five months later, MR imaging demonstrated the atrophy of the pituitary gland with aspect of empty sella due to CSF signal intensity in the sella (Figure 2). Furthermore, the pituitary infundibulum and hypothalamus were normal.

DISCUSSION

Sheehan's syndrome (SS) is a scarce disease of post partum, due to the necrosis of the pituitary gland. It was first reported in 1937 by the British pathologist Harold Leeming Sheehan (http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=endocrin&part=A1257 under pheading Sheehan's syndrome). More often, it is an outcome of severe blood loss or exceedingly low blood pressure during or after giving birth. Physiologically, the pituitary gland tends to be enlarged during pregnancy, which makes it quite sensitive to low blood flow. These elements can really bring about the destruction of the pituitary gland, which can explain why women show different degrees of hypopituitarism, extending from selective pituitary deficiencies to panhypopituitarism. Here, disseminated intravascular coagulation tends to be an associate element in Sheehan's progression. The anterior pituitary is more vulnerable to damage due to a low-pressure portal venous system, unlike the posterior pituitary that receives a direct arterial supply (Manisha Sahay, 2014). The necrosis of the pituitary gland might seem quiet but present with belated hypopituitarism and sometimes can cause panhypopituitarism especially when the ischemic destruction is that important. Generally, SS could generate the failure of lactation, adrenal insufficiency, amenorrhea, and hypothyroidism, but sometimes it can be lethal like when it brings about hyponatremia (Verbalis, 2013; Dejager, 1998).

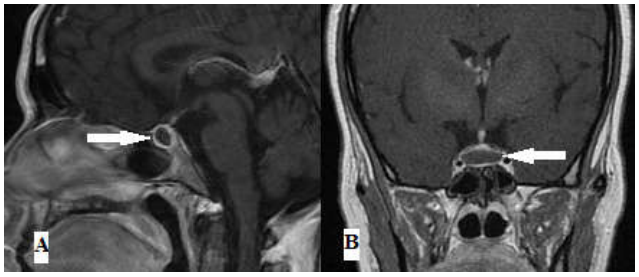

Figure 1. T1-weighted coronal (A) and sagittal (B) postcontrast images of cranial MRI performed on postpartum day one, revealing an enlarged pituitary with peripheral enhancement and no central enhancement (arrows)

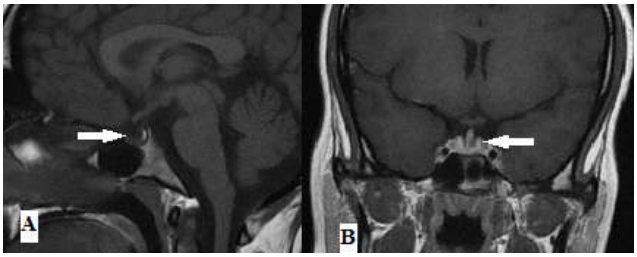

Figure 2. T1-weighted sagittal (A) and coronal (B) post gadolinium images reveal atrophy of the anterior pituitary gland (arrows) on follow-up MRI 5months later

Headache is not considered as a usual presentation of Sheehan syndrome, but it could be a guiding element to it. It is rare when the necrosis can engage the posterior lobe of the pituitary gland. In this case, the percentage of diabetes insipidus patients may attain 5% (Kelestimur, 2003; Kaplun, 2008). MR imaging shows an enlarged pituitary gland with homogeneous T1-weighted hypointensity and T2-weighted hyperintensity with rim enhancement after Gadolinium. At times, infarcted sites are intermixed with perfused tissue, which results in irregular pituitary enhancement and an anterior pituitary atrophy takes place at a later time. So an empty sella of normal volume is the outcome at last (Morani, 2012; Caturegli, 2005). Based on MR imaging, it is noted that Sheehan syndrome findings' are not specific. The major differential diagnosis is lymphocytic hypophysitis that remains a clear regular enhancement of a sellar or suprasellar mass in the acute phase (Caturegli, 2005). but still there is a cystic appearance in about 5% of declared case studies according to MR imaging (Pe´rez-Nu´n˜ez, 2005; Ishihara, 1996). In terms of MR imaging findings, there is a similarity between these cases and the ones noticed during the acute stages of Sheehan syndrome. This is significant since lymphocytic hypophysitis seems habitual in women. It occurs particularly in the peripartum and postpartum phases (Pe´rez-Nu´n˜ez, 2005). Despite the fact that hypopituitarism in lymphocytic hypophysitis could be momentary, there has been a reported case of biopsy-proved lymphocytic hypophysitis, where late-stage pituitary atrophy that led to an empty sella (Ozbey, 1994). Generally, MR imaging shows that pituitary tumors demonstrates a homogeneous enhancement, and more often the clinical differentiation between Sheehan and a pituitary tumor and is easy. Nonetheless, tumors might manifest central necrosis, where case findings via MR imaging might prototype those seen in the acute period of Sheehan syndrome (Morani, 2012).

The basis of the therapy is a lifelong alternative for deficient hormones.

Conclusion

Even if Sheehan syndrome is not frequent result of advanced obstetric care, it requires serious attention in every woman with previous postpartum haemorrhage or with signs of pituitary failure. MR imaging concerning Sheehan's syndrome presents quick evidence signs of the clinical diagnosis as well as a precocious therapy to reduce the patient's morbidity and mortality.

Conflict of Interest: There is no conflict of interest

REFERENCES

Laway, B. A., Mir, S. A., M. I. Bashir, J. R. Bhat, J. Samoon, and A. H. Zargar, 2011. "Prevalence of haematological abnormalities in patients with Sheehan's syndrome: response to replacement of glucocoticoids and thyroxine," Pituitary, vol. 14, no. 1, pp. 39-43.

Sert, M., Tetiker, T., Kirim, S. and Kocak, M. 2003. "Clinical report of 28 patients with Sheehan's syndrome," Endocrine Journal, vol. 50, no. 3, pp. 297–301.

Kelestimur F. 2003. Sheehan's syndrome. Pituitary; 6:181-8.

Vaphiades MS, Simmons D, Archer RL, Stringer W. 2003. Sheehan syndrome: a splinter of the mind. Surv Ophthalmol 48:230–3.

Molitch ME. 1998. Pituitary diseases in pregnancy. Semin Perinatol 22:457–70.

Sheehan HL. 1937. Postpartum necrosis of the anterior pituitary. *J Path Bacteriol.,* 45:189 –214.

http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=endocrin&part=A1257 under pheading Sheehan's syndrome.

Manisha Sahay, Rakesh Sahay (2014) Hyponatremia: A practical approach. Indian J Endocrinol Metab 18: 760-771.

Verbalis JG, Goldsmith SR, Greenberg A, Korzelius C, Schrier RW, *et al*. 2013. Diagnosis, evaluation and treatment of hyponatremia: Expert panel recommendations. Am J Med 126(Suppl 10): S1-42

Dejager S, Gerber S, Foubert L, Turpin G. 1998. Sheehan syndrome: differential diagnosis in the acute phase. *J Intern Med.,* 244:261–6.

Kaplun J, Fratila C, Ferenczi A, *et al*. 2008. Sequential pituitary MR imaging in Sheehan syndrome: report of 2 cases. AJNR 29(suppl 5):941–943.

Morani A *et al*. 2012. Teaching NeuroImages: Sequential MRI of the pituitary in Sheehan syndrome. Neurology 2012;78;e3

Caturegli P, Newschaffer C, Olivi A, *et al*., 2005. Autoimmune hypophysitis. *Endocr Rev.,* 26:599–614

Pe´rez-Nu´n˜ez A, Miranda P, Arrese I, *et al*. 2005. Lymphocytic hypophysitis with cystic MRI appearance. Acta Neurochir (Wien) 147:1297–300

Ishihara T, Hino M, Kurahachi H, *et al*. Long-term clinical course of two cases of lymphocytic adenohypophysitis. Endocr J 1996;43: 433–40

Ozbey N, Inanc S., Aral F. 1994. Clinical and laboratory evaluation of 40 patients with Sheehan's syndrome. Isr J Med Sci 30: 826-829.

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