Pituitary abscess during pregnancy: Management dilemmas

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ABSTRACT

Pituitary abscess is a rare disorder and only one case of pituitary abscess in pregnancy has been reported in the literature. Since, its presenting manifestations are non-specific; the diagnosis is usually made per-operatively. A 35-year-old pregnant lady, with a sellar mass was managed successfully with trans-sphenoidal drainage of the abscess and antibiotic therapy. We discuss the unique set of problems faced in diagnosis and management. Choice of antibiotics, management of intra-operative cerebrospinal fluid leak and absence of any growth on cultures made the overall management challenging. Although, it can present with a dramatic course suggestive of central nervous system infection or a pituitary mass, but more often it mimics an indolent lesion, which can pose as a diagnostic and therapeutic challenge.

Key words: Hypopituitarism, magnetic resonance imaging in pregnancy, pituitary abscess, sellar mass in pregnancy

INTRODUCTION

The normal pituitary gland may enlarge 50-70% during pregnancy.[1] This predominantly occurs because of estrogen stimulated hyperplasia of prolactin producing lactotropes.[2] Pregnancy may also promote growth of a pre-existing pituitary adenoma.[3] However, a pituitary abscess in a pregnant patient is very rare. There has only been one such case reported in the literature. We report pituitary abscess in a 35-year old pregnant woman, which was drained through a trans-sphenoidal route and discuss the unique challenges we faced in the diagnosis and management.

CASE REPORT

A lady aged 35 years, who was 28 weeks primigravida, presented with recent onset progressive visual loss. Until now, she had an uncomplicated pregnancy with unremarkable medical history. No features of sinusitis, sepsis or endocrinopathy were present. On examination, her visual acuity was normal in the right eye and 2/60 in the left eye. Perimetry revealed bi-temporal hemianopia. Fundus examination was normal. There were no signs of meningismus in the patient. Investigations revealed normal peripheral blood picture and total white blood cells count was normal, with 77% neutrophils. She was non-diabetic and her viral markers for human immuno deficiency virus (HIV) were negative. Hormonal evaluation was normal except serum Thyroid Stimulating Hormone, which was slightly raised and serum cortisol, which was low. Thyroxine at 50 μg/day and prednisolone at 15 mg/day in divided doses were started before surgery.

Plain magnetic resonance imaging (MRI) was done before being referred to our hospital. It showed a well-defined sellar mass with supra-sellar extension and compressing the chiasma. It was hypointense to gray matter in the center with a peripheral isointense rim on T1 weighted scans and on T2 weighted image central hyperintensity with peripheral isointense rim was noted [Figures 1 and 2]. A provisional radiological diagnosis of pituitary adenoma with apoplexy was considered. In view of recent onset, rapid deterioration in vision, patient was operated through a trans-nasal trans-sphenoidal approach. Intra operatively, the sphenoid sinus wall was normal, sellar floor was globular with moderate bulge and normal thickness of the bone. There was no evidence of sinusitis and the dura appeared normal. On opening the dura, normal pituitary was encountered, which was slit vertically. To our surprise about 15 ml of yellowish non-foul smelling pus was drained [Figure 3]. Cavity was entered and a biopsy from the wall of the cavity was taken. Since, the yield of the biopsy was minimal each time; repeated aggressive attempts were made, which led to arachnoid

Access this article online	
Quick Response Code:	Website: www.ijns.in
	DOI: 10.4103/2277-9167.124242

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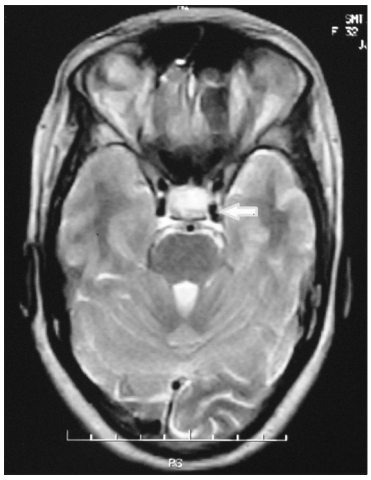

Figure 1: Magnetic resonance imaging (T2W1) axial image showing isointense lesion in sellar region with hyperintensity in center

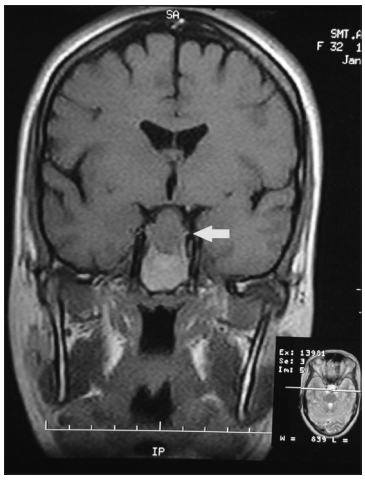

Figure 2: Magnetic resonance imaging (T1W1) coronal image showing sellar region lesion with hypointensity superiorly and hyperintensity inferiorly

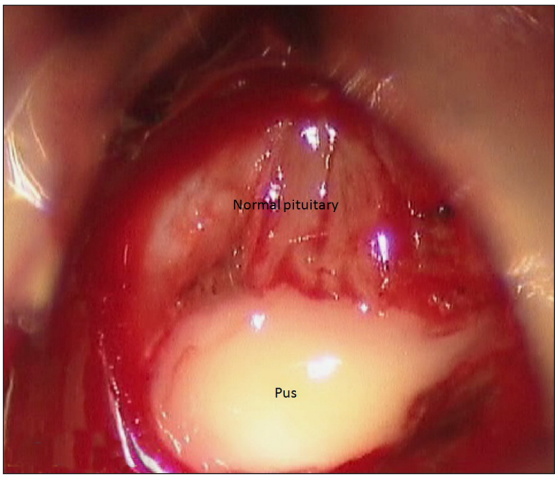

Figure 3: Intra operative image showing pus and normal pituitary

tear. The floor of the sella was reconstructed with fat, bone, and fibrin glue.

Intravenous ceftazidime (2 g/day) and cloxacillin (2 g/day) were administered for 14 days. Post-operative lumbar drain was put and 40 ml cerebrospinal fluid (CSF) was drained prophylactically 6 hourly for 5 days. Oral Carbamazepine was administered prophylactically for 2 weeks for control of seizures.

Patient was discharged 2 weeks after surgery. Ultrasound scan at the time of discharge showed a healthy fetus. Histopathology report suggested acute inflammatory lesion without any evidence of adenoma. Patient delivered a healthy baby girl at term by elective caesarean section. Ophthalmological examination at 1 month follow-up demonstrated normal visual fields and visual acuity in both eyes were normal. Her hormone profile showed normal serum fT3, fT4, TSH, and a normal cortisol level without any supplementation.

DISCUSSION

Pituitary abscess is an extremely rare and potentially lethal condition. There have been only a little over 100 cases reported in literature and this is the second case report in a pregnant woman.[4] Pituitary abscess is clinically suspected if headache, visual complaints, and endocrinopathy are accompanied by fever, meningismus or alteration in mental status. However, similar to our case, in more than 50% of reported cases pituitary abscess has been a surgical surprise.[4] Risk factors for pituitary abscess described in the literature include meningitis, sphenoid sinusitits, contaminated CSF fistula, cavernous sinus thrombophlebitis, previous sellar surgery or an immune compromised state.

Computer tomography may show a ring enhancing cystic lesion with erosion of bone and enlargement of sella turcica. MRI shows a similar picture but may identify normal pituitary gland and delineate the extent of invasion by the lesion. Ring enhancing lesions were seen in 58% of cases in a series by Vates.[2] In the absence of clinical evidence of sepsis, MRI findings may be confused with post apoplectic pituitary adenoma, craniopharyngiomas or rathke cleft cyst.

American college of Radiologists guidance document for safe magnetic resonance (MR) practices (2007) states that there is no conclusive evidence of deleterious effects of MRI on the developing fetus, but claustrophobia is a major deterrent factor. They recommend that if pregnancy is established, one should consider reassessing the potential risks versus benefits. They also suggest MR contrast should not be routinely provided to pregnant patients. Indium-111-tagged white blood cell scan has also been used to diagnose pituitary abscess,[5] but the

radioactivity limits its use in this case; therefore, making a choice of diagnostic tools more limited in the pregnancy.

Peri-operative fluoroscopy in transsphenoidal approach to confirm the anterior wall of sphenoid sinus is routinely used, but was avoided in this case. Per operatively, the presence of pus after splitting the stretched out normal pituitary gland, was a surprise finding. Although, thorough packing of sphenoid sinus was performed, to avoid the post-operative CSF leak a -lumbar drain was inserted, which was uncomfortable for the pregnant patient. Furthermore, a communication between pus filled cavity and cistern made the patient vulnerable to meningitis and occurrence of seizure. Prophylactic carbamazepine had to be started to take care of seizure. There are no guide lines to suggest the use of prophylactic anti epileptics, especially in the pregnant women.

Due to reluctance by our patient, post-operative radiological investigations could not be carried out. As pus culture was sterile, broad spectrum antibiotics were started empirically. In a series by Vates, no organisms were isolated in half of their patients.[2] Sterile cultures may result from an inadequate bacteriological technique or antibiotic therapy initiated before or during surgery.

Considering the increased risk of CSF leak due to raised intra-cranial pressure during labor, elective cesarean section was performed and the patient is doing well on follow-up.

CONCLUSION

Pituitary abscess is a very rare entity and this is the 2nd case of pituitary abscess during pregnancy being reported in the literature. Limited diagnostic tools and selected choice of antibiotics during the pregnancy make such cases challenging. Trans-nasal transsphenoidal decompression with concurrent broad spectrum antibiotics is recommended.

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How to cite this article: Joshi KC, Thakkar R, Gupta R. Pituitary abscess during pregnancy: Management dilemmas. Indian J Neurosurg 2013;2:298-300.
Source of Support: Nil, **Conflict of Interest:** None declared.