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Case Report on Transnasal Transsphenoidal Endoscopic Excision of Pituitary Macroadenoma

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Abstract:
Introduction: A growth or tumor on the pituitary gland is known as a pituitary adenoma. Pituitary adenomas are slow-growing benign tumors that do not spread to other body regions. When they grow large enough, however, they can put pressure on adjacent tissues, such as the nerves that connect the eyes to the brain, causing pain. A growth or tumor on the pituitary gland is known as a pituitary adenoma. Pituitary adenomas are slow-growing benign tumors that do not spread to other body regions. When they grow large enough, however, they can put pressure on adjacent tissues, such as the nerves that connect the eyes to the brain, causing pain.
Case presentation: A 30-year-old male was admitted to tertiary care hospital Wardhawith headaches, visual loss or double vision, hormone malfunction, exhaustion, weight gain, loss of appetite, nausea, and vomiting.Weakness,increased urine output, and unintended weight loss for 15 days.
Therapeutic management: All routine investigationsare done.Hemoglobin decreased by 7.4gm, Total RBC Count Increased 5.84Million/cell, MCV level Decreased 70fl, MCH wasreduced by 22.8 pico-gm; Brain MRI was done. (Finding: Tumors were present in the pituitary gland.) after that doctor diagnosed pituitary microadenoma. **Past History:** He was a known case of pituitary macroadenoma for that he was admitted eight days before in outside hospital for the same complaints.
Conclusion: Due to all medications and quality nursing care patient's condition was stable and had no active complaints at present; hence thepatient is being discharged.

Keywords: Pituitary, Macroadenoma, Hormones, Prolactin-secreting

Introduction:

The pituitary gland is a pea-sized gland attached to the brain's base. It is located below the nose and the sphenoid sinus (air space behind the face), beneath the hypothalamus, an essential and related structure.[1] A gland is an organ that produces and releases specific compounds, such as hormones, that influence the functioning of other organs and tissues. Because its hormones manage the balance of hormones produced by most other glands in the body, the pituitary is known as the "master gland." Many functions, including growth, development, and reproduction, are controlled by the pituitary in this way. Specific organs, such as the kidneys, breasts, and uterus, are also influenced by it.[2] The pituitary gland is divided into three lobes, each with its unique function in the body. The anterior pituitary gland, which makes up roughly 80% of the gland, is closest to the front of the skull. It produces and releasesvarious "signaling" hormones into the bloodstream. These hormones go via the bloodstream to other glands and organs, signaling them to start or stop working. The intermediate lobe secretes only one hormone. This hormone influences the pigmentation of the skin. The posterior pituitary gland, located in the back of the gland, does not produce any hormones. It comprises nerve endings from brain cells that originate in the hypothalamus. Hormones are produced by these brain cells, which then travel down to the rest of the body.[3] Patients with pituitary tumor apoplexy usually

require rapid surgical intervention for diagnosis, tumor excision, and optic apparatus decompression. Although identifying and keeping the pituitary gland in place during surgery can be difficult, it can help with endocrine outcomes.[4] Most pituitary macroadenomas (PMA) can be excised transsphenoidal since they are soft and sucking. Because only a tiny fraction of PMA are firm, transsphenoidal surgery is more complex, takes longer, and is less effective.

No current imaging method can appropriately test PMA viscoelastic consistency in preparation for surgery.MRE is an MRI-based method for evaluating stiffness by watching mechanically generated shear waves propagate through tissue. To see if MRE was feasible and helpful, we tested it in ten patients after transsphenoidal PMA excision. Most pituitary macroadenomas (PMA) can be excised transsphenoidal since they are soft and sucking. Transsphenoidal surgery is more complicated, takes longer, and is less effective because only a tiny percentage of PMA are firm. Assembling.[5] Pituitary adenomas are uncommon brain tumors frequently discovered on magnetic resonance imaging (MRI) scans. Texture analysis is a postprocessing approach that extracts quantitative information from pixel grey level heterogeneity.[6]

Patient-Specific Information:

Here, we are presenting a 30-year-old man who came to the OPD with complaints of headaches, double vision, hormone dysfunction, fatigue, weight gain, loss of appetite, nausea, vomiting, weakness, and feelings of coldness, sexual dysfunction, increased urine output. Changes in bone structure, especially in the face and hands, for 15 days, then he was shifted to the medicine ward for further management to the tertiary care hospital.

Primary content and symptoms of the patient:

He was experiencing headaches, visual loss or double vision, hormone disruption, exhaustion, weight gain, loss of appetite, nausea and vomiting, weakness, and other symptoms such as fatigue, weight gain, loss of appetite, nausea, and vomiting, and other symptoms such as fatigue, weight gain, loss of appetite, nausea, and vomiting, and other symptoms such as fatigue, weight gain, loss of appetite, nausea and vomiting, At the time of admission, these were the predominant symptoms noticed. He was admitted to the male medicine ward in tertiary care hospital for further management,whereroutine examinations and investigations were performed. After all these, he was diagnosed with pituitary macroadenoma. He was put on medical management with the following medicine; Tab Hisone 10 mg OD, Tab Dolo 650mg TDS, Tab Zifi 200mg TDS, Tab Limcee TDS, Tab. Pantoprazole 40mg TDS, InjectionCeftriaxone 1 gm, Tab. Zerodol TDS, Otrivin nasal spray TDS, Solspre nasal spray TDS, Nasoclear nasal Drop TDS.

Medical, family psychological history:

He was admitted eight days before outside the hospital for treatment of pituitary macroadenoma, and after CT and MRI were observed for pituitary macroadenoma, He got treatment for it with negative results. He is a member of a group of people. Except forthe patient, the entire family is healthy.The patient maintains good interpersonal relations with family members, relatives, and neighbors. The patient does not have bad habits like smoking, chewing tobaccoor alcoholism. His intestines and bladder were delicate, but he had problems sleeping due to a severe headache, discomfort, and pain.

Relevant past intervention with outcomes: The patient was admitted to a tertiary care hospital for the earlier complaints. He was getting relief from that hospital. That's why the patient was referred to tertiary care hospital Wardha.

Physical Examination and Clinical findings

Physical examination:

He was alert and cooperative upon arrival, and he was well-oriented. The patient was of average build, standing 162cm tall and weighing 56kg. His vitals parameters are normal. His abnormal finding seen in brain MRI was noted. Examination of the head – tumors are seen near the pituitary gland.

Treatment:

He was admitted eight days back outside the hospital for the treatment of pituitary macroadenoma. Currently, he was recognized for pituitary macroadenoma in Tertiary care Hospital for treatment tab Hisone 10 mg OD, tab dolo 650mg TDS, tab zifi 200mg TDS, tab limcee TDS, tab pantoprazole 40mg TDS, inj ceftriaxone 1 gm, tab zerodol TDS, Otrivin nasal spray TDS, Solspre nasal spray TDS, Nasoclear nasal Drop TDS Was given. To treat pituitary macroadenoma.

Diagnostic Assessment:

Hemoglobin levels decrease based on the patient's medical history and physical examination. 7.4gm, Total RBC Count Increased 5.84Million/cell, MCV level Decreased 70fl, MCH wasreduced by 22.8 pico-gm, and Brain MRI was done. (Finding: Tumors were present in the pituitary gland.)

Therapeutic intervention:

Tab His one 10 mg OD, tab dolo 650 mg TDS, tab zifi 200 mg TDS, tab limcee TDS, tab pantoprazole 40 mg TDS, inj ceftriaxone 1 gm, tab zerodol TDS, Otrivin nasal spray TDS, Solsprenasal spray TDS, Nasoclear nasal Drop TDS were given to the patient. Has been supplied. He responded well to all treatments, with a positive outcome. After examination and therapy, the patient's signs and symptoms were minimized, and he could resume normal activities. The treatment approach has remained unchanged.

Outcome and followup:

The patient'shemoglobin level was increased in response to the treatment and counseling. The patient's symptoms were resolved, and discharge was given to the patient.

Discussion:

Pituitary adenomas are the most common sellartumor. They comprise epithelial pituitary cells and account for 10-15% of all brain tumors. Macroadenomas are tumors with a diameter of more than ten mm.[7]Adenohypophysial cells make up pituitary macroadenomas, which are benign epithelial tumors. Pituitary tumors that are primary malignant tumors are incredibly uncommon. Heredity, hormonal influences, and genetic mutations are all causal contributions to pituitary tumor formation.[8] In the United States, pituitary tumors account for up to 25% of all cases. According to neurosurgical data, pituitary neoplasms occur about once every 100,000 people. Mass effects, hormonal imbalances (pituitary hormone deficit or excess due to tumor compression), and patient comorbidities contribute to morbidity. Malignant tumors are also associated with a high risk of morbidity. Pituitary macroadenomas affect both men and women equally and have no racial preference. The female-to-male ratio in corticotropinomas is 4:1. Tumors affect persons of all ages, but their incidence rises with age, peaking between the third and sixth decades.[9] The macroprolactinomas, which generally respond well to medical treatment, are an exception to this rule.

Dopaminergic agonists affect prolactin-secreting macroadenomas. Bromocriptine, cabergoline, and, earlier, pergolide are some of the most commonly used drugs. Quinagolide is a substitute for bromocriptine that has fewer side effects. Surgery and radiation are rarely employed in treating prolactin-secreting macroadenomas since medication therapy works so well. Tumors that secrete growth hormone should be surgically removed and treated with radiotherapy. While waiting for the effects of radiotherapy to emerge, medicinal treatment is used to reduce growth hormone release. Octreotide is the chosen therapy. A monthly long-acting formulation is now available. Somatostatin is given as a continuous infusion, while octreotide is offered on a tidy-qid basis. Growth hormone receptor antagonists are another type of medication.[10] Endocrine dysfunction and mass effects are the most common symptoms of presentation, but some patients may be asymptomatic. The hormones involved determine the signs of endocrine malfunction. Hypogonadism, infertility, amenorrhea, and galactorrhea are all symptoms of hyperprolactinemia. Cushing's disease is characterized by corticotropin excess, while glucocorticoid insufficiency is characterized by corticotropin suppression. Excess thyrotropin causes secondary hyperthyroidism, while short thyrotropin causes secondary hypothyroidism. Acromegaly is a sign of too much growth hormone, whereas deficient growth hormone causes stunting in children but no symptoms in adults. Approximately 20% of acromegaly patients develop impaired glucose intolerance or diabetes mellitus due to their condition.[11-15]Surgical excision is usually used to treat pituitary macroadenomas. The preferred procedure is transsphenoidal surgery. A transcranial approach is only necessary about 1% of the time. When macroadenomas with significant extracellular expansion are treated with surgery alone, remission rates range from 15% to 37%, compared to 90% for microadenomas. Surgery is frequently combined with radiation therapy and medication. The visual deficit prognosis is correlated with intraoperative MRI findings following transsphenoidal decompression of the anterior optic pathways. If symptomatic leftovers appear unexpectedly after surgery, an intraoperative MRI may help avoid revision surgery.[12] In research including 13 patients, Elhateer et al. discovered that fractionated stereotactic radiation therapy (FSRT) was effective in treating macroadenomas. A 30-patient observational study revealed the following findings (median followup time: 5.25 years)[16-21]

Conclusion:

The patient came tothe hospital with the complaints mentioned earlierheadaches, double vision, and hormone malfunction, as well as weariness, weight gain, appetite loss, nausea, vomiting, weakness, and increased urine output. The patient was diagnosed with pituitary macroadenomas after a thorough examination. After the treatment patient’s prognosis was good. Finally,the patient’s hemoglobin raised to 10.5 gm%. Overall, the patient had a positive response to treatment and was stable. Hence patient was discharged.

References:

1. Nasi-Kordhishti I, Giese S, Hirt B, Honegger J. Anatomy of the pituitary region. InPituitary Tumors 2021 Jan 1 (pp. 67-85). Academic Press.
2. Hadley ME. Endocrinology. Pearson Education India; 2007.
3. Leifer G. Maternity nursing: an introductory text. Elsevier Health Sciences; 2013 Dec 27.

4. Souter JR, Jusue-Torres I, Grahnke K, Borys E, Patel C, Germanwala AV. Long-term outcomes of pituitary gland preservation in pituitary macroadenoma apoplexy: case series and literature review. Journal of Neurological Surgery Part B: Skull Base. 2021 Apr;82(02):182-8.
5. Hughes JD, Fattahi N, Van Gompel J, Arani A, Ehman R, Huston J. Magnetic resonance elastography detects tumoral consistency in pituitary macroadenomas. Pituitary. 2016 Jun;19(3):286-92.
6. Carlo R, Renato C, Giuseppe C, Lorenzo U, Giovanni I, Domenico S, Valeria R, Elia G, Maria CL, Mario C. Distinguishing functional from non-functional pituitary macroadenomas with a machine learning analysis. Mediterranean Conference on Medical and Biological Engineering and Computing 2019 Sep 26 (pp. 1822-1829). Springer, Cham.
7. Jagannathan J, Kanter AS, Sheehan JP, Jane Jr JA, Laws Jr ER. Benign brain tumors: sellar/parasellartumors. Neurologic Clinics. 2007 Nov 1;25(4):1231-49.
8. DeLellis RA, editor. Pathology and genetics of tumors of endocrine organs. IARC; 2004.
9. Nganga HK, Lubanga RP. Pituitary macroadenoma presenting with pituitary apoplexy, acromegaly, and secondary diabetes mellitus-a case report. Pan African Medical Journal. 2013;15(1).
10. Majumdar A, Mangal NS. Hyperprolactinemia. Principles and Practice of Controlled Ovarian Stimulation in ART. 2015:319-28.
11. Gheorghiu ML, Negreanu F, Fleseriu M. Updates in the medical treatment of pituitary adenomas. Hormone and Metabolic Research. 2020 Jan;52(01):8-24.
12. Buchfelder M, Schlaffer S. Surgical treatment of pituitary tumors. Best Practice & Research Clinical Endocrinology & Metabolism. 2009 Oct 1;23(5):677-92.
13. Nganga HK, Lubanga RP. Pituitary macroadenoma presenting with pituitary apoplexy, acromegaly, and secondary diabetes mellitus-a case report. Pan African Medical Journal. 2013;15(1).
14. Singh, C.V., Jain, S., Gourkar, S., Iratwar, S., 2020. Salvage of Failed Endovascular Management of Internal Carotid Artery Injury during Endoscopic Endonasal Pituitary Surgery. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH 14, MD01–MD04. https://doi.org/10.7860/JCDR/2020/43778.14310
15. Dound, Nicole, Sandhya Pajai, Neema Acharya, Sourya Acharya, and Chitra Dound. "Masked Pituitary Macroadenoma Presenting as Pituitary Apoplexy Triggered by Sepsis in Postpartum Period-A Rare Case Report." Journal of Pharmaceutical Research International, July 13, 2021, 12–16. https://doi.org/10.9734/jpri/2021/v33i37A31973.
16. Jain, Shraddha, Bhalerao, P., Singh, C., 2020a. A new endoscopic and anatomical classification of Deviated Nasal Septum with clinical relevance. MEDICAL SCIENCE 24, 2544–2554.
17. Pate, B.S., Yeola, M.E., Gawande, A., Singh, A.K., Tayade, H.A., 2020. Best Practices for Endoscopic Procedures in Covid-19 Pandemic. JOURNAL OF EVOLUTION OF MEDICAL AND DENTAL SCIENCES-JEMDS 9, 3760–3766. https://doi.org/10.14260/jemds/2020/825
18. Singh, C.V., Jain, S., Gourkar, S., Iratwar, S., 2020. Salvage of Failed Endovascular Management of Internal Carotid Artery Injury during Endoscopic Endonasal Pituitary Surgery. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH 14, MD01–MD04. https://doi.org/10.7860/JCDR/2020/43778.14310
19. Chakole, Vivek, Shilpa Shankar, Sneha Kota, Jayashree Sen, Sheetal Madavi, and Devavrat Vaishnav. "Efficacy of Oral Clonidine as Premedication on Intraoperative Bleeding and Consumption of Inhalational Agent in Patients Undergoing Functional Endoscopic Sinus Surgery." Journal of Pharmaceutical Research International, October 28, 2021, 511–16. https://doi.org/10.9734/jpri/2021/v33i47A33041.
20. Lomte, Sunayana, Sourya Acharya, and VijendraKirnake. "Efficacy of Octreotide Versus Terlipressin along with Endoscopic Variceal Ligation (EVL) in Preventing Re-Bleeding and Mortality in Acute Bleeding Esophageal Varices in Cirrhosis: A Randomized Prospective Study." Journal of Pharmaceutical Research International, June 22, 2021, 95–102.
21. Sahu, Preeti Rajendra, Kishor Madhukar Hiwale, and Sunita Jayant Vagha. "Study of Various Gastrointestinal Tract Lesions by Endoscopic Biopsies in a Tertiary Care Centre of Rural District of Maharashtra." Journal of Evolution of Medical and Dental Sciences 10, no. 16 (April 19, 2021): 1135–39. https://doi.org/10.14260/jemds/2021/242.