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REVIEW ARTICLE

Surgery for Pituitary Apoplexy: Vision Outcomes in Early vs Late Intervention

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Abstract:

Introduction:

Visual symptoms are important and critical clinical manifestations of pituitary apoplexy. Visual loss needs more rapid and critical for achieving a better outcome.

Aim of study:

Based on early pituitary apoplexy decompression, the present study evaluates the visual results of the surgical operation for pituitary apoplexy.

Patients and methods :

The study had been conducted between January 2019 and January 2022. Patients with radiological and clinical findings that indicated pituitary apoplexy were included in the study and they were divided into two groups. Group A included those who presented early and underwent early surgical intervention(35 patients and two were excluded from the study lost in follow-up) and Group B included those who presented late (34 patients one lost during follow-up) and were scheduled for surgery (early <72 hrs., late>72 hrs. .).

Results :

Pituitary apoplexy affects 66 patients, with a mean age of 35.66 years and a range of 16 to 68 years out of whom 34 (51.51%) were men and 32 (48.48%) were women.

Visual problems were a common symptom among all the individuals where Bi-temporal hemianopia was the most prevalent visual complaint in 44 patients (66.66%), followed by mono-ocular hemianopia in 13 patients (19.69%), both eye blindness in 4 patients (6.06%), right blindness in 4 patients (6.06%), and left blindness in 1 patient. P value < 0.05 which is statically significant that early presentation with early surgical intervention had a better response than late presentation with late surgical intervention.

Conclusions :

Early surgical decompression of the pituitary fossa for apoplexy yielded better results in terms of the resolution of visual issues.

Introduction

Pituitary apoplexy is an acute clinical illness that was first identified by Bailey and Bleitbrau in 1898 and 1905. It may be brought on by an ischemic infarction or by a hemorrhage into a hypophyseal adenoma that compresses the pericellular tissues and causes symptoms such as pituitary insufficiency 1-6. Pituitary apoplexy has reported a prevalence of 0.6% to 13% in pituitary adenoma series and is commonly characterized by the constellation of neurologic symptoms and endocrine abnormalities that occur as a result of bleeding or infarction of a preexisting pituitary lesion7-15. A rare but potentially fatal clinical illness, it is characterized by sudden onset headache, nausea, vomiting, vision impairment, cranial nerve palsies, and, in some cases, loss of consciousness, most frequently as a result of pituitary hormonal, support being lost. If symptoms worsen without receiving the proper care, this condition puts the patient at a high risk of developing long-term endocrine and neurologic impairments and, possibly, dying7-14. Although

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surgery is the most frequently advised course of action 3,9,10, there is disagreement on the precise timing of the procedure. Previous studies have looked at different dates (3-7 days and >7 days from presentation), but the clinical outcomes have varied. Additionally, some people have questioned the necessity of surgery in general.16-18 There are no established rules for choosing the best candidates for conservative management given the level of controversy. This predicament has ramifications for both patient counseling and the construction of desperately needed perspective series. In the current study, a comparison had been carried out for the clinical outcomes of patients at a single center who were given conservative therapy with those who underwent surgical intervention. The discussion of the outcomes took place within the framework of the institutional patient selection standards. To ascertain the variety of management, strategies and outcomes in the literature, a systemic review had also been done. Criteria had been presented for the assignment of patients with pituitary apoplexy to conservative therapy based on the knowledge gained from this evaluation1,4.

The study aims to investigate visual loss improvement in early versus late surgical intervention in pituitary apoplexy.

Methods and Patients

The study had been conducted between January 2019 and January 2022. Patients with radiological and clinical findings suggest pituitary apoplexy that affects the vision enrolled in the study, those with a visual loss not due to apoplexy were excluded. They were divided into two groups, group A included 35 patients who presented early and underwent early surgical intervention (two of whom were excluded from the study and lost in follow-up). Group B included 34 patients who presented late (one of them lost during follow-up) and were scheduled for surgery (early <72 hrs., late>72 hrs.). Clinical information was gleaned from a review of patients records and was based on a documented neurologic examination carried out in the facility at the initial assessment and subsequent visits. Particularly, systematic records of cranial nerve function, ocular status, endocrine assessment, and consciousness level were made. Following surgery, follow-up evaluations were typically done 6 and 8 weeks later, then every 3 to 6 months for the first year. When suspected, all patients underwent an MRI scan unless it was contraindicated. Accordingly, the treating surgeon's choice to do surgery was based on the patient's clinical condition. The patients who came with an acute decline in their visual status and/or level of awareness were often candidates for surgery. All the patients in the study underwent tumor resection via a standard endoscopic endonasal transsphenoidal approach at Neurosurgical Teaching Hospital and Ghazi El Harriri Hospital in the medical city.

Results

Pituitary apoplexy affected 66 patients, with a mean age of 35.66 years and a range of 16 to 68 years. 34 (51.51%) of the patients were men and 32 (48.48%) were women as in Figure 1.

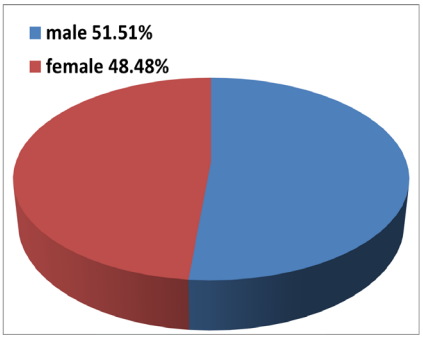

Figure 1 gender distribution

Visual problems were a common symptom among all individuals. Bi-temporal hemianopia was the most prevalent visual complaint in 44 patients (66.66%), followed by mono-ocular hemianopia in 13 patients (19.69%), both eye blindness in 4 patients (6.06%), right blindness in 4 patients (6.06%), and left blindness in 1 patient as in table one.

	Bi-temporal	mono-ocular hemianopia	both eye blindness	right blindness	left blindness	total
No	44	13	4	4	1	66
%	66.66	19.69	6.06	6.06	1.53	100

Table 1 visual problems classification

Visual problems distribution in group A as described in Table 2

	Bi-temporal hemianopia	mono-ocular	both eye blindness	right blindness	left blindness	total
No	21	7	2	3	0	33
%	63.63	21.21	6.06	9.09	0	100

Table 2 Visual problems in Group A

Visual problems in group B as in Table three

	Bi-temporal	mono-ocular	both eye blindness	right blindness	left blindness	total
No	23	6	2	1	1	33
%	69.69	18.18	6.06	3.03	3.03	100

Table 3 Visual problems in Group B

Visual problems recovery in both groups as illustrated in Table 4

group	Preoperative	Postoperative up to 6 months
A (early)	33(100%)	2(6.06%)
B (late)	33 (100%)	10(30.30%)
Total	66	12

Table 4 Visual Problems Recovery

P value < 0.05(0.045) which is statistically significant that early presentation with early surgical intervention had a better response than late presentation with late surgical intervention.

Discussion

Pituitary apoplexy is an uncommon clinical illness characterized by a quick onset of headache, blurred vision, or ophthalmoplegia as a result of the sella's contents rapidly expanding bleeding or infarction from previous lesions. [19] It has been proposed that the likelihood of a better visual outcome is justified by early decompression. [20] However, some uncontrolled and retrospective studies have shown that surgery should be a second-line option in some circumstances because the results of conservative therapy for PA are positive. [21] Mass effect is immediately alleviated by surgical decompression, which is commonly approved for patients with substantial neuro-ophthalmologic dysfunction or a declining level of awareness.[22] The ideal time frame for surgical intervention has, however, largely depended on the view of the specialist. Blindness can result from PA, albeit it does not happen often. [23] Although medical therapy has become increasingly widespread, PA has long been labeled as a neurosurgical emergency due to the substantial morbidity it is associated with.[24] Even though these complications are rare, they can be highly morbid. Surgical intervention carries the risk of postoperative cerebrospinal fluid leaking, endocrinopathy, infection, bleeding, and mortality. [8-10] The potential for long-term cranial nerve damage or irreversible vision loss must be carefully balanced against the upfront surgical risk. The pituitary surgery timing is still debatable. Numerous researchers have reported a variety of findings in the literature. Some authors promoted immediate surgical decompression of the pituitary fossa within 24 hours. Others supported early decompression within three days of a visual loss, similar to the current trial, in which the patients with pituitary apoplexy were operated on within three days of their visual loss. Early surgery was promoted by Woo et al.[25], and Chuang et al[26]. The earlier the operation, the better the results. When compared to individuals who underwent surgery more than three days later, the resolution of impaired visual function was higher in the patients who underwent surgery sooner.

Conclusions

Early surgical decompression of the pituitary fossa for apoplexy yielded better results in terms of the resolution of visual issues.

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