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# A Case Report on Nursing Care of Craniopharyngioma

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***Case Study***

## ABSTRACT

We present a case of a rare craniopharyngioma in the left temporal lobe that developed after no prior brain trauma or surgery. Craniopharyngiomas are slow-growing benign tumours that affect the sellar and parasellar portions of the central nervous system. The incidence of this tumour is roughly 2/100,000. The majority of individuals experience neurological (headaches, visual abnormalities) and endocrine (growth retardation, rapid puberty) disorders over time 13.
**Case presentation:** After undergoing biopsy, M.R.I., and C.T., a 45 year old man was admitted to Acharya Vinoba Bhave Rural Hospital on 13/02 2021 with the main complaint of blurring of vision in right eye, headache, polyurea since 5 month, polydipsia, and altered behavior since 2 month. After a C.T. Scan, the patient was diagnosed with a craniopharyngioma.
**Conclusion:** The patient was admitted to Acharya Vinoba Bhave Rural Hospital with blurred vision in the right eye, headache, polyurea, polydipsia, and altered conduct as his known causes. Going to follow all of the tests, the patient was diagnosed with a craniopharyngioma still the patient requires medical attention and appropriate nursing care.

*Keywords: Craniopharyngioma; endocrine dysfunction; polydipsia; polyurea.*

## 1. INTRODUCTION

Craniopharyngiomas account for 1% to 5% of all primary intracranial tumours (CP). Non-glial tumours that grow slowly are more common in adolescents and teenagers, as well as individuals over the age of 50. Cancers that grow near the hypothalamus in the brain are known as craniopharyngiomas. The aetiology of these lesions is unknown, according to WHO classification, and they are benign Grade-1 tumours. They are, however, frequently categorised as malignant since they have the potential to cause medical issues by interfering with neuroendocrine systems or generating cognitive disorders [1].

### 1.1 Presentation of Case

After undergoing biopsy, M.R.I ,and C.T. a 45 year old man was admitted in neuro ward with the main complaint of blurring of vision in right eye, headache, polyurea since 5 month, polydipsia, and altered behavior since 2 month after a C.T. Scan , the patient was diagnosed with a craniopharyngioma .

### 1.2 Clinical Diagnosis

Craniopharyngioma is a low-grade embryonic malformation of the sellar/ parasellar area. Based on all investigations by physicians, diagnosed through biopsy and marked multiple, abnormal, brownish tissue piece aggregating 6 x 5 x 1 cm.

## 2. PATHOLOGICAL DISCUSSION

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Multiple irregular, brownish tissue fragments measuring 6 x 5 x 1 cm were found during biopsy.

## 2.1 Physical Examination

The patients overall appearance was well and nourished but , since he is not healthy, he is sluggish by nature, and he has not retained with his hygiene and personal grooming . owing to the patient unconsciousness, his emotional health could not be measured. The vital signs of the patient change over time and in relation to their illness. He has visual impairment due to direct infiltration and compression of the visual pathway, visual field defects, typically bitemporal hemianopia, and abnormal pupillary responses, as determined by an eye examination.

## 2.2 Medical Management

The patient is under treatment with combination of antibiotic, antiepileptic, analgesics, diuretic, antiemetic and antifibrinolytic compound. The prescribed drugs were administered as once a day via injection like:

Adrenaline 1ml: Adrenaline Tartrate Injection was administered in order to avoid severe allergic reaction and cardiac arrest intramuscularly in OD.

Ceftriaxone 1gm: Gonorrhoea, pelvic inflammatory disease, meningitis (infection of the membranes that surround the brain and spinal cord), and infections of the lungs, ears, skin, urinary tract, blood, bones, and the joints are all treated with ceftriaxone injection. Cold, flu and other viral infections do not respond to ceftriaxone injection.

Dexamethasone 2ml: Allergic reactions, skin conditions, ulcerative colitis, arthritis, lupus, psoriasis, and breathing disorders are all addressed with dexamethasone. Dexamethasone has a longer quarter than hydrocortisone and is more potent.

Furesemide 2ml: furesemide also known as lasix is loop diuretics. Furesemide has a couple of contraindications, hypersensitivity, cross sensitivity with thiazides and sulfonamides, hepatic coma and anuria, diabetes, low magnesium in the blood and low potassium in the blood are all potential dangers.

Levetricetam: Levetricetam is an antiepileptic drug. Side effects of levetricetam is dizziness, headache, irritability, mood and behavior changes.

Ondesteron 2ml: The injection of ondansetron is used to prevent nausea and vomiting.

Phenytoin 100mg: Phenytoin is used to prevent and control seizures.
Tranexamic acid 5ml: Tranexamic acid works by inhibiting prolonged bleeding by slowing the breakdown of blood clots. It belongs to something like the antifibrinolytics class of drugs.

## 2.3 Surgical Management

Craniotomy done with emergency re explore in view of bleeding from residual tumor. The surgical removal of parts of the skull to expose the brain is known as cranial osteotomy. A craniotomy is a procedure that is used to diagnose, remove, or treat a brain tumour. General anesthesia was used for the cranial surgery.

# 3. NURSING MANAGEMENT

## 3.1 Chronic Headache

**Chart 1. Nursing diagnosis: Chronic headache related to excessive pressure on brain secondary related to bleeding from residual tumor**

| Nursing intervention | Rationale |
|---|---|
| 1] Determine the extent and duration of a headache, as well as the underlying cause, recurrence and maturation of symptoms. | 1] Provides information on the presence of a tumour in the form of a headache. |
| 2] Analgesics had all been given as recommended. | 2] Suffering experienced by tumours of the central nervous system is regarded with this drug. |
| 3] During defecation, instruct the patient to avoid sneezing, coughing or straining. | 3] avoids causing or exacerbating headaches by avoiding straining. |

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|---|---|
| 4] For low to moderate pain, apply a cool compress to the head.<br>5] Consider placing the client in a comfortable position, with the head of the bed elevated. | 4] Reduces facial edema if present, and promotes comfort and ease from a headache.<br>5] To aid in the drainage of venous blood. |

## 3.2 Visual Impairment

**Chart 2. Nursing diagnosis: Blurred vision of right eye related to compressed optic nerves secondary related to decreased visual acuity**

| Nursing intervention | Rationale |
|---|---|
| 1] Examine the patients vision and ability to perform activities. | 1] Establishes a baseline for assessing changes in the patients visual acuity. |
| 2] Encourage the patient to see an ophalmologist once a year at the very least. | 2] Can be used to track the progression of vision loss or complications. Visual acuity loss can cause confusion in the elderly. |
| 3] Provides lighting that reduces glare on walls reading materials and other surfaces. | 3] The eyes of elderly patients are more sensitive to glare and cataracts diffuse and glare, causing vision problems. |
| 4] Make sure the patients room has a night light and that the lighting is adequate for the patients needs. | 4] Adequate lighting aids in the prevention of injury. |
| 5] Assist the patient in seeing larger print and encourages independence. | 5] For teaching purposes, provide large print objects and visual aids. |

## 3.3 Intolerance to Physical Activity

**Chart 3. Nursing diagnosis: Intolerance to physical activity related to surgical procedure secondary to prolonged bed rest**

| Nursing intervention | Rationale |
|---|---|
| 1] Determine the level of physical activity and mobility of the patient. | 1 ] The level of activity and mobility serve as a foundation for goal setting. |
| 2] Determine the nutritional state of the patient. | 2] For activities, sufficient energy reserves are required. |
| 3] Adapt activities to the patients abilities. | 3] To avoid over exertion. |
| 4] Examine the social factors that are influencing the present situation. | 4] Stress may increase effects of an illness. |
| 5] Refer to various professions, such as physical or occupational therapy | 5] To create treatment regimens that are tailored to each user. |

## 3.4 Verbal Difficulties

**Chart 4. Nursing Diagnosis: Verbal difficulties related to certain neurotransmitter biochemical changes through out the brain**

| Nursing intervention | Rationale |
|---|---|
| 1] Maintain a low tone of voice and speak slowly as much as possible. | 1] A high-pitched voice can increase agitation while slow speech aids comprehension. |
| 2] Maintain a cool, peaceful atmosphere. | 2] Keep fear from spiraling out of control, leading to confusion, hallucination and delusions. |
| 3] Use plain or descriptive language as well as keeping the direction clear. | 3 Even simple phrases can be difficult for the client to comprehend. |
| 4] Demonstrate in a straight forward, concrete, | 4] Reduces miscommunication and transforms |

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|---|---|
| and literal way. | miscommunication into delusional structure. |
| 5] To grasp the clients anxiety. I used therapeutic techniques. | 5] Try to explain the fallings behind the sentences, even though they are difficult to understand. |

### 3.5 Knowledge Deficient

**Chart 5. Nursing diagnosis: knowledge deficient related to absence of cognitive information**

| Nursing intervention | Rationale |
|---|---|
| 1] Establish a trusted relationship to facilitate cooperation and other therapeutic support Enable the patient and family to speak about or verbalize their thoughts about depression. Enable as much family engagement in the patients care as possible. | 1] The effects of craniopharyngioma on the family can be devastating. Providing avenues for verbalization can aid in the promotion of understanding and cooperation during the caregiving profanities. |
| 2] Determines the patient learning capacity. | 2] To determine the clients cognitive development. |
| 3]Provide knowledge that is important to the case to motivate the patient | 3] To improve interaction in obtaining pertinent facts. |
| 4] Provide detail on additional resources for learning. | 4] Its likely that this will help you learn more or allow you to learn at your own speed. |

## 4. DISCUSSION

A case study that yielded a beneficial result Mr. X, a 51-year-old man, had symptoms such as decreased motivation at work, easy fatigability for seven months, infrequent falls with giddiness for six months, recent memory impairment and increased appetite for four months, inability to walk steadily for two months, and bladder incontinence for one month, as well as symptoms that suggested polydipsia and polyuria [2].Patients who had surgery followed by radiation, as well as those who were 18 or younger compared to those who were older, men compared to women, and those who did not have a headache, had a better prognosis, however these differences were not statistically significant [3]. Papillary type craniopharyngioma showed a lower recurrence rate than adamantinomatous type craniopharyngioma, even after surgical removal. The histologic classification of craniopharyngiomas is useful in determining therapy and follow-up decisions, especially in adults [4]. In this case of craniopharyngioma in the left temporal lobe, there was no history of head trauma or surgery [5]. Craniopharyngiomas are rare intracranial tumours that frequently cause neurological problems [6]. A papillary craniopharyngioma with the potential to spread On the other side of the craniotomy, the tumour expanded [7]. The large head circumference at birth, the size of the tumour, blindness, and hemiparesis seen before the age of five months suggested a prenatal process that went unnoticed due to inadequate gestational monitoring [8]. With only 35 cases recorded in the literature, infrasellar craniopharyngioma is a rare disorder [9]. MCP (malignant craniopharyngioma) is an extremely rare disease with cytological atypia, significant mitotic activity, and a poor prognosis, first described by Akachi in 1987 [10]. Children and the elderly are more prone to them (55-74 years). Depending on the tumour size and growth direction, craniopharyngiomas can affect the hypothalamus, pituitary stalk, optic nerves, chiasm, and carotid arteries [11]. Infrasellar craniopharyngiomas emerge from enamel-forming neural crest cells and are a type of craniopharyngiom [12]. Stereotactic neurosurgery is a safe, minimally invasive, and cost-effective treatment option for paediatric craniopharyngioma [13].

Nurses help patients with craniopharyngiomas by preventing and detecting issues, teaching patients and families about the importance of long-term follow-up, and collaborating with multidisciplinary teams [14].

## 5. CONCLUSION

The patient was admitted neuro ward with blurred vision in the right eye, headache, polyurea, polydipsia and altered conduct as his known causes. Going to follow all of the tests,

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the patient was diagnosed with a craniopharyngioma still, the patient requires medical attention and appropriate nursing care.

## DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

## CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline patients consent and ethical approval has been collected and preserved by the authors.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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