



VP Shunt Placement and the Incidence of Associated Complications in Patients Presenting in Mayo Hospital Lahore.

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Abstract:

Objective: The main aim of this study was to find the incidence of complications associated with VP shunt placement in patients presenting in Mayo Hospital Lahore.

Place and duration of study: This study was carried out in a duration of 9 months from February 2017 to October 2017 in Mayo Hospital Lahore.

Materials and Methods: The patients with one year or age less than one year either male or female were included in this study and only those patients were included in which suspicion of hydrocephalus was noted on the basis of clinical signs and symptoms which includes vomiting of feeding, irritability, engorged veins of scalp, decreased head control, splayed cranial sutures and deviation of the eyes inferiorly in which is known as sun setting sign. CT scan was done in these patients for confirmation of the diagnosis which showed ventricles filled with fluid and dilated plains of the brain. Ventro-peritoneal shunt was inserted in all these patients and complications were noted on the follow ups.

Results: A total of 100 patients were selected for the study who were fulfilling the criteria and among them 80 (80%) of the patients had no complications while 20 (20%) of the patients had some kind of associated complication. In patients with age less than 2 years complications were seen in 12 (22.22%) of the patients. Complications in age group 2-15 years was seen in 6 patients (20%). And only 2 (12.5%) patients showed complications who had age greater than 15 years. 11 (15.71%) male patients showed complications among all the 70 (70%) males included in this study. 30 (30%) were the female patients and 9 (30%) patients showed complications.

Conclusion: Increased rate of post VP shunt complications are seen in our study. Although highest incidence was seen in age group less than 2 years but no significant relation is seen in VP shunt complications and age group. In males high incidence rate is seen as compared to females.

Keywords: Hydrocephalus, VP shunt, Complications,

Introduction: Abnormal increase in cerebrospinal fluid either acquired or congenital is defined as hydrocephalus. Acquired causes can be trauma, infection or tumor. CSF is produced in ventricles normally but increase in pressure results due to decreased excretion or excessive production of CSF in the ventricles. The increase in pressure within the brain compresses the vessels which leads to decreased blood supply to brain resulting in abnormal functions and abnormal metabolism of the brain tissues. The basic treatment of hydrocephalus is placement of a shunt in brain systems which drains the extra fluid in peritoneal cavity where it is drained. Now a days it is a common practice. The benefits of this procedure are masked sometimes by the complications such as infection and malfunctioning.

Infections results from the bacteria which can be identified by the culture and sensitivity and gram staining of the CSF along with signs and symptoms which includes neurological symptoms, fever and mechanical malfunctioning. The symptoms depends on the type of bacteria causing the infection but occasionally wrong technique and infected film can alter the results leading to untimely diagnosis and treatment. Encephalitis, meningitis and ventriculitis can lead to increased morbidity and mortality. Infections related to shunting are usually seen within 30 days of surgery.

The aim of this study was to find the efficiency of this procedure, its associated complications and factors responsible for mechanical malfunctioning.

Materials and Methods: The patients with one year or age less than one year either male or female were included in this study and only those patients were included in which suspicion of hydrocephalus was noted on the basis of clinical signs and symptoms which includes vomiting of feeding, irritability, engorged veins of scalp, decreased head



control, splayed cranial sutures and deviation of the eyes inferiorly in which is known as sun setting sign. CT scan was done in these patients for confirmation of the diagnosis which showed ventricles filled with fluid and dilated plains of the brain. Ventro-peritoneal shunt was inserted in all these patients and complications were noted on the follow ups. Standard procedure was used for inserting VP shunt and 6 months follow up was checked for the signs of infection. Presence of one the following symptoms was labeled as infection.

Fever greater than (38°C)

Increased leukocyte count

Pus discharge

Inflammatory signs such as warmth, increased redness and tenderness.

Decreased glucose <15g/dl in CSF.

Results: A total of 100 patients were selected for the study who were fulfilling the criteria and among them 80 (80%) of the patients had no complications while 20 (20%) of the patients had some kind of associated complication. In patients with age less than 2 years complications were seen in 12 (22.22%) of the patients. Complications in age group 2-15 years was seen in 6 patients (20%). And only 2 (12.5%) patients showed complications who had age greater than 15 years. 11 (15.71%) male patients showed complications among all the 70 (70%) males included in this study. 30 (30%) were the female patients and 9 (30%) patients showed complications.

Conclusion: Increased rate of post VP shunt complications are seen in our study. Although highest incidence was seen in age group less than 2

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years but no significant relation is seen in VP shunt complications and age group. In males high incidence rate is seen as compared to females.

Discussions: VP shunting is one of the most common procedures carried out in neurosurgery and according to an estimation around 30,000 cases of VP shunts are done a per year. One of the major complication is infection which results in increased morbidity and mortality. In around 8 to 12% of the cases of VP shunting, infection is seen.

In 198 patients in which VP shunting was done, complications were seen in 28.8% of the patients by Pal et al in his study. These findings are in comparison with our current study. 11 (15.7%) male patients showed complications out to 70 (70%) male patients and in females complications were seen in 9 (30%) of the patients. Higher male ratio is seen as compared to females.

55.7% infection was seen in males and 44.3% infection was seen in females in a study by Kumar et al which does not coincides with our study. However infection of the VP shunt was seen in 18.1% of the patients which is comparable to current study. Theophilus et al studied 90 patients out of which 13 (14.4%) had infection in which VP shunting was done. 23% patients developed VP shunt complications which were managed by Khan et al in his study in which he managed 113 patients of hydrocephalus. 205 patients studies by Jeelani et al, 17 (8.3%) patients developed infection later on.

Conclusion: Increased rate of post VP shunt complications are seen in our study. Although highest incidence was seen in age group less than 2 years but no significant relation is seen in VP shunt complications and age group. In males high incidence rate is seen as compared to females.



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