

Parental/Guardian Knowledge Regarding Implanted Shunt Type, Setting, and Symptoms of Malfunction/Infection

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Introduction

Patients with shunts often interact with providers distant to their primary hospital; making it important that the parent(s)/guardian(s) be well versed in the type of shunt implanted and symptoms of malfunction/infection. This is particularly important with magnetic-sensitive programmable valves, as MRI increasingly replaces CT scanning for surveillance imaging.

Methods

Over a 2 month period, 64 consecutive shunted patient's primary caregivers were administered questionnaires at clinic visits. Caregivers were asked to: 1) identify shunt valve name, type and setting if applicable, 2) list symptoms of shunt malfunction/infection, and 3) to indicate whether they had access to references regarding shunt type/setting, booklets from the Hydrocephalus Association and quick reference cards with symptoms of shunt malfunction/infection. One provider required the caregivers to carry informational cards with shunt valve/setting information over the previous 4 years; this was compared to those not carrying cards.



Results

Sixty-one (95%) correctly identified whether the shunt was nonprogrammable or programmable. Twenty-three of 29 (79%) with programmable valves correctly identified the setting; 90% of those carrying shunt setting cards were correct versus 72% in those without. Shunt setting card carriers correctly identified the valve name 74% of the time versus 18% in non-card carriers. Eighty-four percent of those issued shunt setting cards produced them at the clinic appointment. Overall 70% had access to shunt booklets by the Hydrocephalus Association and 70% had quick reference cards for symptoms of shunt malfunction/infection. Fifty-nine (92%) correctly identified 3 symptoms

of shunt malfunction with vomiting (66%), headache (50%) and lethargy/sleepiness (39%) most frequently cited.



Conclusions

Fever

Vomiting

Headache

Vision problems

Personality change

Irritability and/or tiredness

Loss of coordination or balance

Education regarding care of shunted patients by providing written cards with shunt type/setting and access to reference materials appear to be effective. Developing plans for guided instruction with assessment of caregiver's knowledge in the clinic setting is important for patient safety.

QUICK REFERENCE CARDS		
GOODMAN CAMPBELL BRAIN AND SPINE	Riley Hospital for Children	
Symptoms of Sh	unt Malfunction	
Infants	Toddlers	
Enlargement of the baby's head	Head enlargement	
Fontanel is full and tense when	Fever	
the infant is upright and quiet	Vomiting	
Prominent scalp veins	Headache	
Swelling or redness along the shunt tract	Irritability and/or sleepiness	
Fever	Swelling or redness along the	
Vomiting	shunt tract	
Irritability	A loss of previous abilities	
Sleepiness	(sensory or motor function)	
Downward deviation of the eyes	Seizures	
Seizures	(See Back)	

Symptoms of Shunt Malfunction Children and Adults Swelling or redness along the

shunt tract (infrequent) Difficulty in waking up or staying awake Seizures Decline in academic performance

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This is a reference list of symptoms of shunt malfunction. Symptoms can vary widely from one individual to another. If you have any questions or concerns, contact your neurosurgeon at Goodman Campbell Brain and Spine by calling 317-274-8852.

SAMPLE SHUNT SETTING CARD

Manufacturer:	Mettronic Stratt
	11. Decision and a second
Programmable:	Yes No
Setting:	1.5

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Learning Objectives

By the conclusion of this session, participants should be able to:

 Discuss methods to educate caregivers of shunted patients regarding symptoms of shunt malfunction/infection.
Identify the importance of

reinforcing and assessing parent/guardian knowledge of type/setting of implanted shunts. 3. Describe how to implement a program for systematic education and assessment of shunted patients.