

Epidural Blood Patch After Intrathecal Baclofen Pump Placement



INTRODUCTION

- Intrathecal baclofen pumps (ITBP) have become routine in the management of spasticity in children with cerebral palsy (CP)
- The use of ITBPs may be associated with complications:
 - Complications associated with medications infused
 - Surgical complications - hematoma formation and infections
 - Equipment - Pump failure, catheter kinking or disconnection
 - Leakage of CSF
- CSF leaks can cause seroma formation in the epidural space or around the pump, and can be associated with a post-dural puncture headache (PDPH)
- Our Anesthesia pain service has performed EBP on several children following placement / replacement of ITBP, for PDPH or for CSF leak not associated with documented headaches
- The purpose of this study was to review our institutions' experience with PDPH after ITBP procedures and to explore the management leading to the use of EBP in these patients.

METHODS

- Following IRB Approval, the records of all children who had ITBP placement / replacement, or catheter replacement between 2008 and 2016 were reviewed from hospitals EMR (Epic Systems, Verona WI).
- Patient data was extracted by searching a relational database constructed in a business intelligence platform (Qlikview, Radnor PA) with the patients being identified by CPT codes.
- This data was united with patient data from the Anesthesia Pain Service database on patients who had epidural blood patches placed.

RESULTS

- Of 313 ITBP placement procedures, 15% had HA or evidence of leak (Fig 1)
- Procedures where the catheter only was replaced was associated with the highest rate of EBP, likely due to the leak resulting from the removal of the old catheter (Fig 1)
- Most patients suffered from spastic quadriplegia (Table 1).
- PDPH was present in only 10/16 (63%) of patients
- 3/16 (19 %) of patients had neither PDPH nor CSF leak, but had symptoms of posture related agitation / anxiety as they were unable to communicate about HA symptoms
- PDPH symptoms occurred on average by day 4 (range 2-9)

Figure 1. Diagram of procedures resulting in EBP

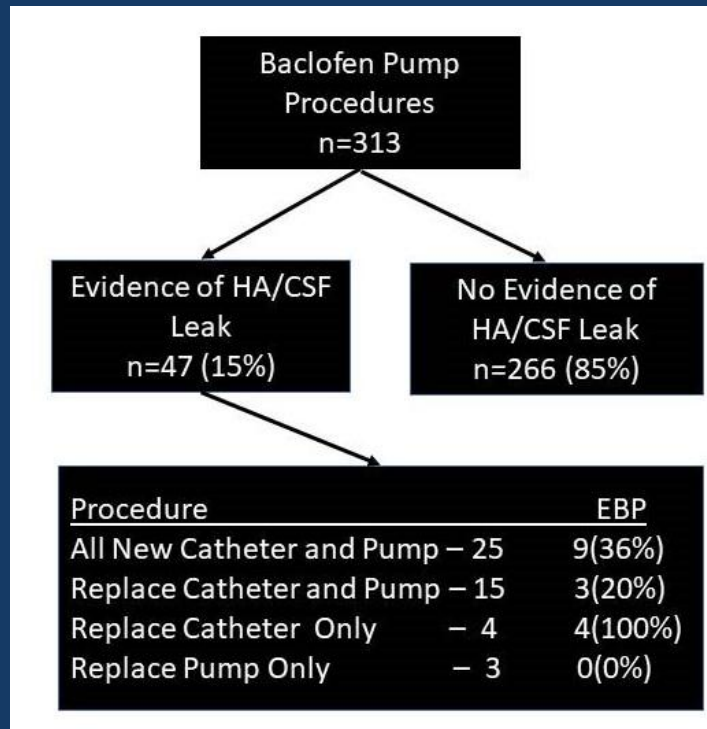


Table 1. Characteristics of patients that underwent EBP

Patient	Age	Weight	Gender	Diagnosis	PDPH	CSF Leak	HA Day	EBP Day	Catheter Level	EBP Level	Volume Instilled
1	16	43.7	F	Quadriplegia		Yes		18	L4-5	L5-S1	30
2	8	24.9	M	Quadriplegia	Yes		9	13	L4-5	L3-4	10
					Yes			25		L2-3	15
3	14	29.9	M	Quadriplegia	Yes	Yes	5	11	L2-3	L3-4	15
4	6	22.4	M	Quadriplegia	Yes	Yes	9	12	L2-3	L3-4	7.5
5	17	47.1	M	Diplegia	Yes	Yes	3	91	L3-4	L3-4	15
6	16	56.4	F	Quadriplegia	Yes		2	7	L3-4	L5-S1	20
7	17	33.1	M	Quadriplegia				6	L2-3	L4-5	20
8	12	44	F	Quadriplegia	Yes		3	5	L2-3	L3-4	18
9	17	67.5	M	Dystonia	Yes		3	6	L2-3	L4-5	20
10	13	39.6	F	Quadriplegia		Yes		2	L1-2	L1-2	20
11	8	25.9	M	Quadriplegia				10	L3-4	L4-5	10
12	17	30.5	F	Quadriplegia				10	L4-5	L2-3	15
13	11	25	F	Quadriplegia		Yes		14	L2-3	L4-5	15
14	19	80.9	M	Dystonia	Yes		4	6	L3-4	L4-5	25
15	20	51.9	M	Diplegia	Yes		2	4	L3-4	L4-5	30
16	20	63	F	Quadriplegia	Yes	Yes	2	46	L3-4	L2-3	20

CONCLUSIONS

- In patients with severe spasticity, ITB instillation via an implantable pump has become standard therapy. PDPH or CSF leak are known complications which occurred in 15% of our cases.
- EBP was performed to treat both of these complications successfully on 16 of 17 occasions. One patient required an additional EBP.
- In the CP population, some patients may have difficulty communicating about HA symptoms. A high index of suspicion for CSF leak, based on posture related behavioral changes lead to successful treatment with EBP.

REFERENCES

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