

Introduction

Cerebrospinal fluid (CSF) leaks are a frequent complication of spinal surgery, with reported rates between 2 and 20%. Management is highly variable and options include primary repair, CSF drainage, the use of fibrin sealant or some combination of the above. Using a retrospective cohort the authors aim to identify the appropriate management of iatrogenic spinal CSF leaks.

Methods

We queried our institutional database for iatrogenic CSF leaks between 1/1/2004 and 3/14/2017 using Current Procedural Terminology (CPT) and International Classification of Disease (ICD) codes. Excluded were patients who had primarily intradural procedures; tethered cord release, tumor resection, posterior fossa decompression, etc. Information regarding patient demographics, surgical characteristics and post-operative course was gathered, including whether primary closure (with non-absorbable suture) was possible, lumbar drain placement at initial surgery, use of fibrin sealant, number of subsequent explorations, rate of infection, length of stay, and number of hospital admissions.

Results

Our cohort consisted of 124 patients who suffered iatrogenic CSF leak out of 3,965 procedures, for a rate of 3.1%. Primary closure (+/- lumbar drain) was attempted in 64 patients, with successful repair in 47 (73.4%). Lumbar drain placement (+/- primary closure) was performed in 49 with success in 43 (87.8%). Delayed exploration of the surgical wound was required in 34 patients. Patients in whom primary closure could not be achieved and did not have a lumbar drain had a 39.5% exploration rate. Patients who required exploration had statistically significant increases in length of stay (19.6 vs. 7.8 days), hospital admissions (2.1 vs. 1.0) and infections (15 vs. 0).

Conclusions

Primary repair of the leak and use of fibrin sealant, upon discovery, with consideration of lumbar drain, should be performed whenever possible, as they are associated with the shorter hospital stays, fewer hospital admissions, and lower rates of reoperation and infection.

Learning Objectives

Identify the appropriate management of iatrogenic spinal cerebrospinal fluid (CSF) leaks.

References

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