Pneumocephalus treatment

A high degree of suspicion is needed to make the diagnosis, prompt treatment, as well as remedying the source of air to prevent unwanted morbidity and mortality [1]. Tension pneumocephalus usually requires emergent management.

When pneumocephalus is due to gas-producing organisms, treatment of the primary infection is initiated and the pneumocephalus is usually followed.

Treatment of non-infectious simple pneumocephalus depends on whether or not the presence of a Cerebrospinal fluid fistula is suspected. If there is no leak the gas will be resorbed with time, and if the mass effect is not severe it may simply be followed. If a Cerebrospinal fluid fistula is suspected, management is as with any CSF fistula.

Supplemental oxygen increases the rate of absorption of pneumocephalus. Treatment of significant or symptomatic post-op pneumocephalus by breathing 100% O2 via a nonrebreather mask increases the rate of resorption [2] [3] (100% FiO2 can be tolerated for 24–48 hours without serious pulmonary toxicity [4]

Tension pneumocephalus producing significant symptoms must be evacuated. The urgency is similar to that of an intracranial hematoma. Dramatic and rapid improvement may occur with the release of gas under pressure. Options include placement of a new twist drill or burr holes, or insertion of a spinal needle through a pre-existing burr hole (e.g. following a craniotomy).

References

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