Post-operative Infection after Surgery of Brain Tumors: a Five-year Review of Common Pathogens, Presentation and other Associated Factors

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Background
- Post-op infection happens after 2-4% intracranial surgeries for brain tumors
- Limited data is available regarding common pathogens and associated risk factors
- We present a descriptive study of patients with these neurosurgical infections during a 5 year period

Methods
- Patients who had an infection after brain tumor surgery at our institution from 2010-2014 were retrospectively reviewed after IRB approval
- Patients with primary surgery outside the Cleveland clinic or shunt surgery after index tumor surgery and subsequent shunt infection were excluded from study
- Total of 75 patients were reviewed including infections after craniotomy (67 patients), after burr hole procedures (5 patients), and after trans-nasal operations (3 patients)
- Demographic information, type of intracranial tumor and factors associated with surgery, characteristics of the infection and also re-admission within a year after discharge and mortality were evaluated

Results
- Age average was 51 years and 41% were females
- Median interval between tumor surgery and diagnosis of infection was 1 month
- 72% had post-op wound issues such as wound dehiscence, drainage and pseudomeningocele
- In 10 patients both gram stain and culture were negative and treatment was performed based upon clinical findings
- Of 26 of 75 patients (35%) had re-admissions for recurrent/resistant infection
- 2 patients (3%) died within 90 days of diagnosis of infection

Conclusions
- Staphylococcal infections (MSSA and CONS) are the most common pathogens in post-op infections of brain tumors
- The infection recurrence and readmission rate among these patients is relatively high at 35%, and is even greater (50%) in the presence of titanium mesh
- With aggressive and appropriate treatment (antibiotics ± wound washout) mortality within 90 days remains relatively low (3%)