CASE 10: CHROMOBLASTOMYCOSIS: (Slide 10A, B, C: H&E, PAS, GMS)

**Histology:**

The section has multiple fragments of inflammatory granulation tissue resected from the lesion. The lesion is located in the cerebral white matter, one of the fragments representing the wall of an abscess.

The lesion has multiple suppurative granulomas, randomly distributed. The suppurative granulomas, have a circumscribed epithelioid cell wall and the central part having dense polymorph aggregate. In other areas the granulomas have multiple foreign body giant cells. The area representing the abscess has the wall made up of edematous granulation tissue and mildly gliotic white matter with microabscesses. The luminal aspect of it has necrosis admixed with acute inflammatory cells, and nuclear debris. Entrapped in it and in the giant cells of deep granulomas, clusters of thin, septate, golden brown fungal hyphae are seen. The fungi are found in the marginal granulomatous reaction, the central part being the suppurative abscess. None of the fungi are found in vascular lumen but observed in the perivascular inflammation. They are found budding with closely placed chain of disjunctures. Many of the small vessels have fibrin thrombi occluding the lumen. The brain parenchyma away from the lesion does not show significant gliosis or astrocytosis, but edema, vascular congestion and plasma transudation are prominent.

**Diagnosis:** CHROMOBLASTOMYCOSIS

**Comment:**

**Chromoblastomycosis**

- Chronic, cutaneous mycosis with neurotropism
- Found in tree bark, decaying vegetation, soil, affect bare foot walkers
- Cladosporium (Hormodendrum), Phialophora
- Invades superficial skin through fissures/ulcers; spread to brain hematogenously
- Headache, mass effect, localizing neurological signs, coma.
- Single or multiple abscesses, common in frontal lobe, other areas also involved, can cause ventriculitis (fatal), cerebral infarction with/without meningitis. Brown pigmented, septate, branching fungus surrounded by lymphocytes, plasma cells, polymorphs, giant cells / granulomatous reaction with fibrosis
- PAS, Methenamine silver
- No satisfactory drug treatment

Chromoblastomycosis is caused by several pigmented fungi, the most common belonging to the genera Cladosporium and Phialophora. The fungi are saprophytic and found in soil and decaying vegetation. Traumatic implantation of fungi into the skin is the main mode of infection causing cutaneous and subcutaneous Chromomycosis. Cerebral Chromoblastomycosis is caused by hematogenous spread of the fungi from non cerebral sources. Rarely, the brain may be the primary site with no other demonstrable source. It is therefore suggested that Chromoblastomycosis is a neurotropic fungus. Most cases of CNS Chromomycosis occur in apparently immunocompetent persons and only occasionally in the immunocompromised subjects like renal transplant recipients or patients with lymphoma. Patients with CNS Chromomycosis tend to develop multiple intraparenchymal foreign body granulomas interspersed with microabscesses. Numerous neutrophil clusters are seen in the center of the granulomas. Foreign body giant cells, lymphocytes, eosinophils and plasma cells may also be present. The fungal hyphae are
Fungal Infections

2-3µm thick, golden brown, elongated, septate and branching. Some patients develop true intracranial abscesses and alternatively meningitis can be the mode of manifestation. Abscesses are most frequent in the white matter of the cerebral hemispheres, particularly in the frontal lobes, can be multiple and may extend to the ventricles. Other less commonly involved sites are the thalamus, hypothalamus and the cerebellum.

Cladosporium trichoides is the most frequently isolated organism causing Chromoblastomycosis. In culture, black heaped up velvety colonies are formed. These fungi are also called “dematiaceous fungi”. Aggressive medical therapy with Amphotericin B and Flucytosine, surgery or both may be required for treating isolated intracranial infection.
**CASE 10 - CHROMOBLASTOMYCOSIS**

**Fig A:** Fungal abscess wall, the lumen containing acute inflammatory exudates admixed with fibrin and necrotic pus.  
(H&E Obj X 5)

**Fig B:** Yellow coloured thin, septate, branching hyphal forms of Chromoblastomycosis (Cladosporium trichoides) within the acute inflammatory exudates.  
(H&E Obj X 10)

**Fig C:** Higher magnification shows the hyphal forms of Chromoblastomycosis with giant cell reaction  
(H&E Obj X 40)

**Fig D:** Septate, thin, branching hyphal forms of Chromoblastomycosis and budding with oval disjunctures.  
(GMS Obj X 40)