Clinical History: This male patient presented at age 45 with slowly progressive bilateral exophthalmos. Histopathology revealed xanthogranulomatous inflammation. Systemic evaluation revealed bilateral retrobulbar tumors, densities around the kidneys, and sclerosis in the long bones of the extremities, and densities in the skull. The disease was slowly progressive with extension into the sphenoidal sinus with bone destruction. The patient underwent debulking surgery of the orbit, multi-agent treatment and radiotherapy and is well 12 years after the initial diagnosis.

Discussion: The biopsy showed a xanthogranulomatous inflammation with fibrosclerosis and Touton type giant cells, DD: Erdheim-Chester disease, adult onset xanthogranuloma and necrobiotic xanthogranuloma. General work-up was consistent with Erdheim-Chester disease (ECD). ECD is a rare systemic disease, affecting predominantly adults (mean age 53 years), and is characterized by a symmetrical sclerosis at the diaphyseal portions of the lower extremities with additional extra skeletal involvement. Histologically it is characterized by a diffuse infiltration of the affected organs by lipid-laden histiocytes and Touton type giant cells with an inflammatory infiltrate of lymphocytes and plasma cells and fibrosclerosis. More than 50% of cases have some sort of extraskeletal involvement. Many internal organs and tissue sites may be affected including the kidney, retroperitoneum, lung, pericardium, skin, orbit and brain. The pathogenesis is unclear. It is considered a rare form of non-Langerhans cell histiocytosis, positive for CD68, CD 163, lysozyme; negative for S100 and CD1a. It is unclear whether ECD presents as a disease of marrow cavities, or whether extramedullary analogs exist. Orbital involvement occurs in some patients and is usually bilateral, symmetric and painless. In most cases it occurs several years before the final diagnosis.

The DD of the xanthogranulomatous disease of the orbit includes: 1) adult onset xanthogranuloma (AOX) which may be uni- or bilateral, without systemic findings 2) Adult onset asthma and periocular xanthogranuloma (AAPOX), 3) necrobiotic xanthogranuloma (NBX) and 4) Erdheim Chester disease (systemic disease). All cases of AAOX and NBX have evidence of immune dysfunction: asthma and reactive lymphadenopathy (AAPOX), and paraproteinemia (NBX). Skin lesions are found in all syndromes. AOX, AAPOX and NBX affect the anterior orbit with clinical exophthalmus. The histopathological features of all xanthogranulomatous disease of the orbit have a similar appearance, and can therefore not be subclassified on histopathological grounds alone. However, necrobiosis with palisading histiocytes and ulcerative lesions is most often seen in NXG, whereas large lymphoid aggregates are often found in cases of AAOX. ECD exhibits florid fibrosis.

Current treatment is often ineffective, especially in ECD (66% died). The best treatment results have been obtained with multiagent chemotherapy, with or without radiation or surgery

References:


