HISTORY

ผู้ป่วยชายชาวพมา ผู้ป่วย 40 ปี

CC : ตาข้างขวามัวลง 1 สัปดาห์ก่อนมารพ.

PI : underlying disease HT, Old CVA, CA Nasopharynx S/P XRT x 37 ครั้งเมื่อปี 2549 รักษาที่ รพ.รามาธิบดี 5 ปีก่อนมารพ. ไปตรวจ รามาธิบดี พบ Radiation retinopathy BE S/P intravitreal avstin injection,

VA : Rt.20/30 Lt.20/20

เวลียาวมัวลง

- VA : Rt. Hand motion, Lt.20/25
- MRI: Optic nerve hyposignal T1, hypersignal T2 ได้รับการรักษาอาการไม่ดีขึ้นแต่  HBOT ร่วมด้วย
- Dx. Radiation induce optic neuropathy
- Rx. Pulse methylprednisolone 1 gm v OD x 3 days
  อาการไม่ดีขึ้น VA : Rt. Light perception, Lt.20/25 , RAPD positive Rt.
  จึงส่งมาเพื่อพิจารณา Hyperbaric oxygen therapy
RADIATION-INDUCED OPTIC NEUROPATHY
RADIATION OPTIC NEUROPATHY (RON)

- infrequent but usually devastating consequence of radiation to the optic pathways.
- It is almost exclusively an iatrogenic phenomenon, occurring in patients who have undergone radiation therapy for tumors and other lesions in sites near the visual apparatus.
RADIATION OPTIC NEUROPATHY (RON)

- usually after a latency of months to years following radiation exposure, resulting in poor to no vision in one or both eyes.
- no consistently effective treatment has emerged to restore or even preserve visual function
- Hyperbaric oxygen (HBO), a therapy well established for a number of other conditions, has been reported to be of benefit in select patients with RON
CLINICAL PRESENTATION
OF RON

- Radiation damages tissue by a variety of mechanisms
- The effects may be immediate or delayed
- “Early” responses
- “Late” responses
“EARLY” RESPONSES

- occur within several weeks of initiation of therapy
- are characterised pathologically mostly by inflammation
- May be mild and clinically unrecognised
- may be reversible
“LATE” RESPONSES

- occur months to years after completion of therapy
- are characterised by vasculitis and necrosis
- are often devastating and may destroy any part of the nervous system.
- generally are irreversible
Although RON has been reported as early as 1 month following completion of radiation therapy, it more often becomes manifest after a latency of 3 months to a few years.

- most patients present within 8 to 16 months of completion of radiation therapy
CLINICAL PRESENTATION OF RON

- Some patients present with stuttering symptoms before a constant visual defect is present.
- In patients in whom both optic nerves or the chiasm are exposed to radiation, an estimated 75% will have bilateral involvement, with the second eye following within weeks of the first eye.
CLINICAL PRESENTATION OF RON

- MRI with gadolinium-DPTA enhancement is the preferred modality for establishing the aetiology of vision loss, in that it is necessary to differentiate RON from recurrent tumour.
- MRI shows segmental enhancement of the nerves, chiasm, or tracts, sometimes associated with enlargement of the affected region.
THE TREATMENT OF RON

- Corticosteroids are often used even though there are no controlled clinical trials demonstrating their efficacy, and multiple reports in the literature describe no beneficial effect.
- A retrospective analysis suggests that steroids are not independently associated with any difference in outcome.
THE TREATMENT OF RON

- Anticoagulation with heparin and/or warfarin also appears to be without benefit.
- Anticoagulation appeared to have a beneficial effect in patients with generalised radionecrosis of the cerebrum and/or spinal cord, but a similar effect has not been demonstrated in patients with RON.
THE TREATMENT OF RON

- Investigations in animals using inhibitors of angiotensin-converting enzyme (ACE) to reduce radiation-induced injury
- This study represents the first demonstration of medical prophylaxis of radiation-induced optic neuropathy, at least in an animal model, and may provide a pharmacological strategy that can be used in patients at risk for, or who develop RON