Retinoblastoma

What is Retinoblastoma?

- Malignant tumor of the Embryonic neural retina (fetal Retinoblasts) that normally differentiate into post-mitotic retinal photoreceptor cells and neurons.
Retinoblastoma

INCIDENCE
- 11% of Ped. Cancer in the 1\textsuperscript{st} year but only 3\% of all Ped. Cancers up to 15 years.
- 1/13000 birth.
- Nearly 120 new case/year in Egypt.
- 250 case/year in USA.
- Increased in Africa – South America.

RETINOBLASTOMA

CLASSIFICATION
- There are three overlapping parameters for classifying retinoblastoma:
  1. \textit{Laterality:} Tumours may be unilateral or bilateral
  2. \textit{Focality:} Tumours may be unifocal or multifocal
  3. \textit{Genetics:} Tumours may be hereditary (40\%) or nonhereditary (sporadic 60\%)
Unifocal Vs Multifocal

Other Method to Classify RB according to pattern of growth:
1 - Endophytic
2 - Exophytic
3 - Surface infiltration
4 - Combined

RETINOBLASTOMA

CLASSIFICATION
Endophytic Vs Exophytic

RETINOBLASTOMA

CLINICAL PRESENTATION

- Leukocoria
- Squint
- Impaired vision
- Others:
  - Glaucoma
  - Hyphema
  - Uveitis
  - Orbital
LEUKOCORIA

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
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<tr>
<td><img src="https://example.com/image1.png" alt="Image 1" /></td>
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<td><img src="https://example.com/image3.png" alt="Image 3" /></td>
<td><img src="https://example.com/image4.png" alt="Image 4" /></td>
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RETINOBLASTOMA MANAGEMENT

Treatment Options
1- Chemotherapy
2- Radiotherapy
3- Local treatment
4- Combined approaches

2- Radiotherapy
A- External Beam Radiotherapy (ERBT)
- Radiosensitive
- Major Complications
  - Dry eye
  - Cataract
  - Retinopathy
  - Retarded orbital development
  - Restrictive motility
Scleral implantation of radioactive seeds transiently with 40-Gy.
Precaution or Guidelines in surgery

- cataract surgery in this age group. During surgery, care was taken not to break the posterior capsule and disturb the vitreous face.
- Unlike cataract surgery of other pediatric cataracts, primary posterior capsulorhexis and anterior vitrectomy were not performed as the vitreous might contain retinoblastoma seedlings that could disseminate.
- lensectomy by pars plana route was not used. Reports have documented the spread of retinoblastoma through the sclerotomy wound of the pars plana incision.

<table>
<thead>
<tr>
<th>NO</th>
<th>STAGE</th>
<th>CAUSE OF CATARACT</th>
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<tbody>
<tr>
<td>1</td>
<td>C</td>
<td>POST RADIO</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>POST RADIO</td>
</tr>
<tr>
<td>4</td>
<td>B</td>
<td>POST VITRECTOMY</td>
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<tr>
<td>5</td>
<td>B</td>
<td>POST VITRECTIMY</td>
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Age at surgery and duration of stability

<table>
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<tr>
<th>Age at surgery</th>
<th>Mean age</th>
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<tr>
<td>34ms-51ms</td>
<td>45ms</td>
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<table>
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<tr>
<th>Period of stability of tumours</th>
<th>mean</th>
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<tbody>
<tr>
<td>3-36ms</td>
<td>25ms</td>
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Post radiotherapy case

<table>
<thead>
<tr>
<th>Initial and response to treatment</th>
<th>Post radiotherapy</th>
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<tbody>
<tr>
<td><img src="image1.jpg" alt="Initial images" /></td>
<td><img src="image2.jpg" alt="Post radiotherapy images" /></td>
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<tr>
<td><img src="image3.jpg" alt="Initial images" /></td>
<td><img src="image4.jpg" alt="Post radiotherapy images" /></td>
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<tr>
<td><img src="image5.jpg" alt="Initial images" /></td>
<td><img src="image6.jpg" alt="Post radiotherapy images" /></td>
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Post vitrectomy case

Outcome measure criteria

- (1) Recurrence of retinoblastoma,
- (2) need for enucleation, and
- (3) systemic metastasis.

Overall outcome was defined as favorable in the absence of any of these measures and unfavorable in the presence of 1 or more.
Thank you