Histopathological study of malignant melanoma of eye

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ABSTRACT
BACKGROUND: Malignant melanoma of the eye is quite commonly occurring tumor in the eye. If it diagnose early in to the course then it will give major impact on the morbidity and mortality of the patient. Aims and objectives: The aim of this study is to evaluate the incidence of malignant melanoma of eye, its frequency in to the various parts of the eye and histopathological type of the melanoma. MATERIAL AND METHODS: A retrospective study of last 10 years (41 cases) was done at department of pathology, M.J. institute of ophthalmology, B.J. medical college, civil hospital campus, Ahmedabad. A detailed clinical history was obtained and specific attention was given to age, sex, pathological examination including gross and microscopy. RESULTS: Our study include 41 cases of malignant melanoma of eye over the period of 10 years. Among 41 cases, 33 cases (80.48%) of choroid melanoma, 5 cases (12.19%) conjunctival melanoma and 3 cases (7.3%) iris melanoma. Among 33 cases of choroid melanoma, 17 cases (51.51%) are mixed variant of melanoma, 11 cases (33.33%) of spindle cell variant and 5 cases (15.15%) of epitheloid variant. Among 41 cases 34 cases have age more than 50 yrs means 82.92% cases fall in the age group of greater than 50 years of age. If bar raised to Age>40 years then 38 cases fall in this age group means 92.68% cases fall in this age group. CONCLUSION: From this study we conclude that most common site of melanoma in the eye is choroid(80.48%), followed by conjunctival (12.19%), followed by iris(7.3%), and in choroid melanoma mixed cell melanoma is most common variant of melanoma. This tumour is more common in old age group and very least common in the child.

Key words: Malignant melanoma, ocular, spindle cell, mixed cell, epitheloid cell.

INTRODUCTION
Ocular melanoma is melanoma of the eye. It’s a cancer that develops from cells called melanocytes. Melanocytes produce the dark-coloured pigment melanin, which is responsible for the colour of our skin. These cells are found in many places in our body, including the skin, hair, and lining of the internal organs, including the eye1. Most melanomas begin to grow in the skin, but it’s also possible for a melanoma to begin in other parts of the body, such as the eye melanoma can develop in one of several places within the eye. This occurs along the uveal tract of the eye, which includes the choroid, ciliary body and iris. The choroid is part of the lining of the eyeball. Melanoma can develop in one of several places within the eye2. This occurs along the uveal tract of the eye, which includes the choroid, ciliary body and iris. The choroid is part of the lining of the eyeball. It’s dark-coloured (pigmented) to prevent light reflecting around the inside of the eye. The ciliary body extends from the choroid and focuses the eye by changing the shape of the lens. The iris is the clearly visible, coloured disc at the front of the eye, which controls the amount of light entering the eye. All these structures are coloured with melanin3. The incidence of uveal melanoma increases with age, and most cases are diagnosed in people in their 50s. The neoplasm has well documented capacity to metastasize haematogenous and kill the patient. Its favoured metastasized site is the liver. The characteristics features is the metastases may develop after a long disease free interval4.

MATERIALS AND METHODS
A retrospective study of last 10 years (41 cases) from 2003 to 2014 was done at department of pathology, M.J. institute of ophthalmology, B.J. medical college, civil hospital campus, Ahmedabad. A detailed clinical history was obtained and specific attention was given to age, sex, pathological examination including gross and microscopy. For histology haematoxylin and eosin stained section were studied from different areas. Sections were studied for tumor cell type which included

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RESULTS

Our study include 41 cases of malignant melanoma of eye over the period of 10 years. Among 41 cases, 33 cases (80.48%) of choroid melanoma, 5 cases (12.19%) conjunctival melanoma and 3 cases (7.3%) iris melanoma. Among 33 cases of choroid melanoma, 17 cases (51.51%) are mixed variant of melanoma, 11 cases (33.33%) of spindle cell variant and 5 cases (15.15%) of epitheloid variant. Among 41 cases 34 cases have age more than 50 yrs means 82.92% cases fall in the age group of greater than 50 years of age. If bar raised to Age>40 years then 38 cases fall in this age group means 92.68% cases fall in this age group. From this study we conclude that most common site of melanoma in the eye is choroid(80.48%), followed by conjunctival (12.19%), followed by iris (7.3%), and in choroid melanoma mixed cell melanoma is most common variant of melanoma. This tumour is more common in old age group and very least common in the child.

Table 1: Incidence of melanoma in various part of eye.

<table>
<thead>
<tr>
<th>EYE MELANOMA</th>
<th>TOTAL CASES (41 CASES)</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choroid melanoma</td>
<td>33 cases</td>
<td>80.48%</td>
</tr>
<tr>
<td>Conjunctival melanoma</td>
<td>5 cases</td>
<td>12.19%</td>
</tr>
<tr>
<td>Iris melanoma</td>
<td>3 cases</td>
<td>7.3%</td>
</tr>
</tbody>
</table>

Table 2: Histopathological types in choroid melanoma

<table>
<thead>
<tr>
<th>CHOROID MELANOMA</th>
<th>MIXED VARIANT</th>
<th>SPINDLE CELL VARIANT</th>
<th>EPITHELOID VARIANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL CASES (33 CASES)</td>
<td>17 CASES</td>
<td>11 CASES</td>
<td>5 CASES</td>
</tr>
<tr>
<td>PERCENTAGE</td>
<td>51.51 %</td>
<td>33.33 %</td>
<td>15.15 %</td>
</tr>
</tbody>
</table>

Table 3: Age distribution of malignant melanoma of eye

<table>
<thead>
<tr>
<th>AGE</th>
<th>&gt; 50 YEARS</th>
<th>&lt; 50 YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASES</td>
<td>34 CASES</td>
<td>7 CASES</td>
</tr>
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</table>

DISCUSSION

Melanoma is composed of atypical melanocytic cell that occupy and replace normal stroma these cell tend to have a larger nuclear to cytoplasmic ratio.

- More prominent nucleoli
- A higher multiple nuclease

More frequent mitotic figure than normal.

- Tumour cell that have fusiform shape and relative mild atypia are termed spindle melanoma.
- Those that have a more spherical shape and more pronounced anaplasia are called epitheloid melanoma cell.
- Majority of iris melanomas are composed either exclusively of spindle melanoma cell or of an admixture of spindle melanoma cell and benign nevus cell in comparison with Choroidal and ciliary body melanomas.

So the survival prognosis of patient who have iris melanoma is generally sub statically better than that of patient who have Choroidal melanomas. One type is also classified as mixed cell melanoma in which admixture of spindle cell and epitheloid cell without a preponderance of any type cell. In many independent studies spindle cell melanomas have been shown to be associated with the most favourable survival prognosis and epitheloid cell melanomas with least favourable survival prognosis. There are very few studies based on histopathological findings in malignant melanoma of eye. This study is a novel study as it involves 41 cases over 10 years of time period. Histopathological study in switzerland was done period of 40 yrs between 1953 & 1993 Total 1624 cases.
found during the 40 years of period. Among 1624 cases they found 80% cases of choroid melanoma, 10% cases of conjunctival melanoma, 5% cases of iris melanoma. In choroid melanoma they found 51% cases of mixed variant melanoma, 36% spindle cell variant, 12% epitheloid cell variant. 90% cases fall in age group more than 40 year of age.

**Figure 1: Spindle cell variant of malignant melanoma**

**Figure 2: Spindle cell variant of malignant melanoma**

**Figure 3: Mixed variant of malignant melanoma of eye.**

**CONCLUSION**

From this study we conclude that most common site of melanoma in the eye is choroid (80.48%), followed by conjunctival (12.19%), followed by iris (7.3%). In choroid melanoma among three pathological variant Most common variant mixed cell variant- 51.51%, Followed by spindle variant—33.33%, followed by epitheloid variant –15.15%. The most common age for presentation above 50 year 82.92% case include in this age group. If bar raised to age more than 40 years then 92.68% cases include in this age group. Means this tumour is more common in old age group and very least common in the childhood and younger age group.

**REFERENCES**