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Original Research Article

Mucosal Melanoma - A Retrospective Study in a Tertiary Cancer Centre

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Abstract:

Introduction: Primary mucosal melanomas arise from melanocytes located in mucosal membranes lining respiratory, gastrointestinal and urogenital tract. Mucosal melanomas are rare, they are known to behave more aggressive and have less favorable prognosis compare to other melanoma subtypes. Most of the mucosal melanomas occur in the occult sites, which together with the lack of early and specific signs contribute to late diagnosis and poor prognosis. This study aimed to analyse the anatomical distribution of primary mucosal melanomas and their epidemiology.

Materials and methods: This is a descriptive, observational study conducted at KMIO. All cases with primary mucosal melanomas that underwent biopsy between 2019 to 2021 are included. Archived histopathology and immunohistochemistry slides along with data from medical records department were reviewed.

Result: We present 24 cases of mucosal melanoma, identified over a period of 3 years. In our study the mean age of presentation was 58 years and male: female ratio is 1:2. Twelve, three, nine out of twenty four cases are from GIT, FGT, Head and neck respectively. We give a short comparison of few characteristics of cutaneous and mucosal melanomas.

Conclusion: The purpose of the study is to analyse the anatomical distribution, epidemiology of mucosal melanomas along with literature review. Because of their rarity and aggressiveness along with varied clinical and morphological features melanoma has to be included in the differential diagnosis, especially in non-cutaneous sites and poorly differentiated neoplasms.

Keywords: Mucosal melanoma, anatomical distribution.

Introduction

Melanomas are malignant tumours arising from melanocytes. Although melanoma is mostly of cutaneous origin, it can also occur in various extracutaneous sites that is from melanocytes located in mucosal membranes lining respiratory, gastrointestinal and urogenital tract.

Although the majority of mucosal melanomas originate from the mucosa of the nasal cavity and accessory sinuses, oral cavity, anorectum, vulva and vagina, they can arise almost in every part of mucosal membranes [1]. Mucosal melanomas are rare and they represent only 1.4% of all melanomas [1, 2], they are known to behave more aggressive and have less favorable prognosis compared to other melanoma subtypes. Most of mucosal melanomas occur in occult sites, which together with the lack of early and specific signs contribute to late diagnosis, and poor prognosis. Because of their rareness our knowledge about their pathogenesis and risk factors is insufficient, and also there are no well-established protocols for staging and treatment of mucosal melanomas [1].

To date, the risk factors are poorly understood and the pathogenesis remains unclear, although an association with human papillomavirus and herpesvirus has been described. In contrast to CM, the diagnosis of mucosal evolutive lesions is more difficult and MM is therefore likely to be detected at a late stage. As a result, MM is usually diagnosed late, and malignant cells are often surrounded by a rich vascular and lymphatic network, which is mostly considered to be the cause of aggressive behaviour and poor prognosis. The molecular landscape includes a lower incidence of BRAF oncogene mutations but a high frequency of KIT mutations, suggesting a distinct genetic origin with respect to CM. The overall five-year survival rate for MM is 10–20%. However,

new therapeutic strategies have the potential to improve the outcome of MM, which has a poor response to immunotherapy.

The study's main objective is to review the anatomical distribution of primary mucosal melanomas and their epidemiology and also we gave a short comparison of some characteristics of cutaneous and mucosal melanomas. This eventually will help the clinician and pathologists in early DIAGNOSIS.

Material and Methodology:

The present retrospective cohort study was conducted at KMIO, Bangalore from January 2019-December 2021. Study included 24 biopsy/excision cases of mucosal melanomas. Since the study is retrospective in design and did not involve any intervention, an exemption from Ethical Committee was taken. A broad consent was taken for patient's clinical details and Procedures. The cases were studied for various parameters including age, male: female ratio and site, histomorphology. Thereafter the distribution of the parameters of various mucosal melanomas was tabulated. Archived histopathology and immunohistochemistry slides along with data from medical records department were reviewed. The study results were analysed using Microsoft excel. Appropriate statistical method of analysis was used.

Results: In the present study involving 24 cases, the mean age of the study participants was 58 years, with a range of 42 to 75 years. Figure 1 and 2 delineates the characteristics of study based on gender and site, table 1 delineates the characteristics of study based on subsite. Of the 24 cases involved in this study 12 cases were GIT (50%) in that 7 were anal canal (29%), 5 were rectum (21.1%). 9 out of 24 cases were head and neck (37.5%) in that 6 were nasal cavity (25%), 3 were oral cavity (12.5%). 3 cases out of 24 were urogenital tract (12.5%) in that 1 cervix (4.1%), 1 vagina (4.1%), 1 urethra(4.1%) respectively.

Classic melanocytic tumours show epithelioid cells displaying prominent nucleoli and melanin pigments in the cytoplasm. In the event of the study author came across varied morphological findings like plasmacytoid cells, rhabdoid cells, undifferentiated to spindle with or without prominent nucleoli, amelanotic melanomas and these are confirmed by using panel of immunohistochemical markers. Panel of markers used are CK, P63 for carcinomas, CD45 for hematolymphoid tumors, SMA, desmin for mesenchymal tumors, synaptophysin and chromogranin for neuroendocrine tumors. S100, Melan A, HMB45 and SOX10 used for melanomas.

In the 24 cases 9 were diagnosed as melanomas morphologically because of presence of characteristic melanin pigments. Rest 15 cases were initially diagnosed as poorly differentiated malignancy due to its varied morphology, hence panel of markers were performed to arrive at final diagnosis.

Table 1: Characteristics based on subsite

Site	Subsites (N, %)	Number Of Cases N(%)
GIT	Rectum (5, 20%) Anal canal (7, 28%)	12(48%)
Head and neck	Oral cavity (3, 12%) Nasal cavity (5, 20%)	8(32%)
Urogenital system	Vagina (3, 12%) Cervix (1, 4%) Urethra (1, 4%)	5(20%)

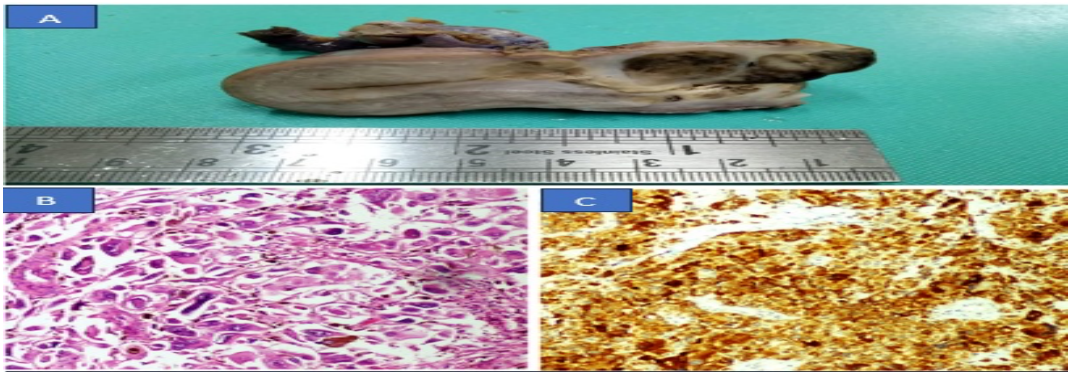

Figure 1: A. Hysterectomy gross specimen showing ulcerative lesion. B. Histomorphology showing malignant cells arranged in sheets, having eosinophilic nuclei and cytoplasm showing melanin pigment (40X) C. Immunohistochemistry showing nucleus and cytoplasmic positivity at S100

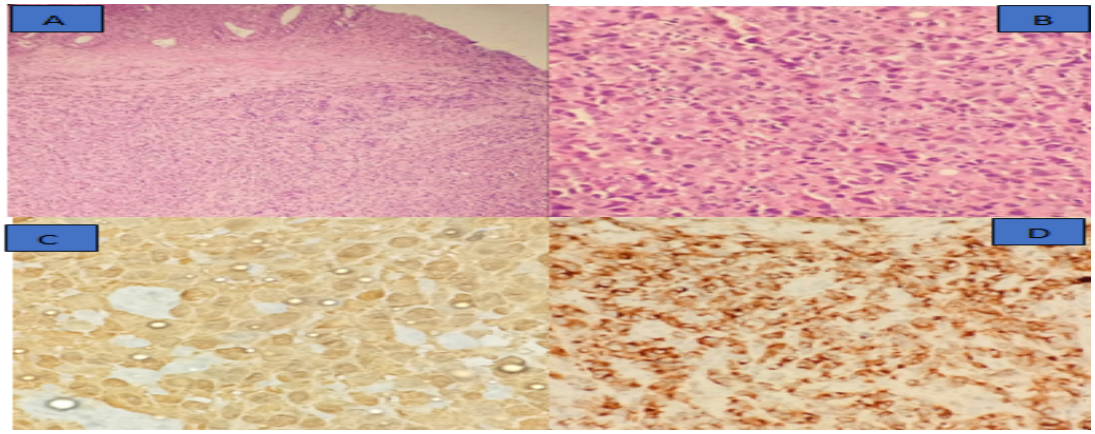

Figure 2: A. Histomorphology of colon showing oval to spindle neoplastic cells with prominent eosinophilc nucleoli with absent melanin pigment B. Histomorphology of colon showing neoplastic cells. C. Immunohistochemistry showing cytoplasmic positivity of HMB D. Immunohistochemistry showing nucleus positivity of 60X10

Discussion:

Primary mucosal melanomas are rare, which is challenging to diagnose. They are known to behave more aggressive and have less favorable prognosis compare to other melanoma subtypes. Only 0.03 of all cancers diagnosed are mucosal melanomas. In aggregate mucosal melanoma accounts for 1.3% of all melanomas. According to the WHO: Head and neck accounts for -55%, anorectum-25%, Female genital tract- 15%, and urogenital tract- 5%. There are only few studies in literature on epidemiology of mucosal melanoma.

In our study cases predominantly involving are GIT followed by head and neck and urogenital tract respectively. Thompson lester et al [(4)] did a study on 115 cases of sinonasal and nasopharyngeal system majority of cases involved in nasal cavity (n=42, 36.5%) followed by sinuses, combination of sinuses (n=34, 30%) and septum (n=39, 33.5%) when compared with the present study were we had nasal cavity/septum (n=4, 16%), maxillary sinus (n=1, 4%). In oral cavity 3 cases (12%) each one case involved hard palate, GBS, alveolus respectively.

In Haiyan chen et al., they analysed a total of 640 cases, obtained between January 1973 to December 2011, which included 265 rectal melanomas(41.5%), 375(58.5%) are anal melanomas and is similar to present study where we had total number of 12 cases in which 5(41.6%) are rectal and 7(58.4%) are anal melanomas.[(5)]

In Michal lotem M.D et al., they analysed a total of 9 cases, obtained between January 1986 to December 2002, which included 7 vulvar melanomas (77.5%), 2 (22.5%) are vaginal melanomas and is similar to present study, however we had total 5 cases of urogenital system in which 3 are vaginal melanomas (60%), 1 is cervical melanoma (20%), 1 is urethral melanoma (20%). Here we also give a short comparison of characteristics of mucosal and cutaneous melanoma.

Table 2: Comparison of Mucosal and cutaneous melanoma

Mucosal melanoma	Cutaneous melanoma
Mucosal surfaces	Skin
60- 70 years	50-60 years
No staging for mucosal melanomas	AJCC staging present
More aggressive	Less aggressive compared to mucosal melanomas
Risk factors - unknown	Sun exposure
CKIT mutations in 15-22% cases	CKIT mutations n <5% cases
BRAF mutations are rare	50-60% cases show BRAF mutations

Conclusion: Primary mucosal melanomas are rare and aggressive. Despite all treatment modalities, overall, five years survival remains poor especially anorectal about 20% [6, 7, 8] and median survival 14 to 20 months [9,10]. The poor prognosis is likely due to delayed detection. Because of their rarity and aggressiveness along with varied clinical and morphological features melanoma has to be included in the differential diagnosis, especially in non-cutaneous sites and poorly differentiated neoplasms. An initial panel should include melanoma markers like S100 and SOX10 for early diagnosis which helps in complete excision reduces local recurrence and progression.

References:

1. Review Article Primary mucosal melanomas: a comprehensive review. Marija Mihajlovic, Slobodan Vlajkovic, Predrag Jovanovic, Vladisav Stefanovic Department of Clinical Research, faculy of medicine, Serbia
2. WHO classification of tumours 5th edition Digestive system tumours.
3. WHO classification of Head and Neck tumors.
4. Thompson LD, Wieneke JA, Miettinen M. Sinonasal tract and nasopharyngeal melanomas: a clinicopathologic study of 115 cases with a proposed staging system. Am J Surg Pathol 2003; 27: 594-611.
5. Haiyan Chen, MM, Yibocai et al. Incidence, surgical treatment and prognosis of anorectal melanoma from 1973 to 2011- A population based SEER analysis, Medicine (Baltimore)-2016 95(7);e2770.
6. Chang AE, Karnell LH, Meck HR. The national cancer data base report on cutaneous and non-cutaneous melanomas,. 1988; 83:1664-1678.
7. Zhou HT, Zhou ZX, Zhang HZ, Bi JJ, et all. Wide local excision could be considered as the initial treatment of primary mucosal melanoma. Chin med J(Engl) 2010;123:585-8
8. Che X, Zhao DB, WU YK, et all. Anorectal malignant melanomas: retrospective experience with surgical management. World J Gastroenterol. 2011:17:534-9
9. Zhang S, Gao F, Wan D. Effect of misdiagnosis on the prognosis of anorectal malignant melanomas. J cancer res clin oncol.2010; 136:1401-5
10. Droesch JT, Flum DR, Mann GN. Wide local excision or abdominoperineal resection as the initial treatment for anorectal melanoma?Am J surg. 2005;189:446-9.