

Intravascular and Extravascular Migratory, Metastatic Melanoma of the Great Saphenous Vein

Mahmood Ali Sayed^{1*}, Narayani Joshi², Abha Mathur³

¹Assistant Professor, Department of Pathology, Jaipur National University Institute of Medical Sciences and Research Centre, Jagatpura, Jaipur, Rajasthan, India.

²Ex-Professor & Head, ³Professor, Department of Pathology, Mahatma Gandhi Medical College and Hospital (MGMCH), Sitapura, Jaipur, Rajasthan, India.

ABSTRACT

Melanoma blood vessel metastases are very uncommon. We report this very rare case of metastatic melanoma along the wall of great saphenous vein (GSV), showing intra and extra vascular metastasis. By far only a single case of intravascular metastatic melanoma (IVMM) of GSV and thirty six cases of extravascular migratory metastatic melanoma (EVMM) of GSV have been reported. In our case melanoma cells were seen both inside and outside of the wall of GSV, and in the dermis. A 60 years old male presented with multiple swellings upper left thigh since one and a half year. Patient was operated. All swellings, along with, part of saphenous vein till the knee, and small part of skin were excised under GA. Microscopically, hematoxylin and eosin sections given from various sites showed features of malignant melanoma. Tumor cells were seen in the dermis, and the lumen, as well as outside the wall of saphenous vein, but not in the epidermis. Only very few melanocytic granules were seen in a single area of a section. On Immunohistochemistry -, Markers HMB45, S100 and Vimentin are strong immunoreactive. CK PAN was focal immunoreactive.

In our case the melanoma spread along the wall of the GSV. This pericytic angiotropism of melanoma cells, also showing signs of intravasation, which suggests that melanoma cells may migrate along the external surface of vessels, a

mechanism termed 'EVMM and also by invading the blood vessels 'IVMM'.

Keywords: Amelanotic Melanoma, IVMM, EVMM, HMB45.

What's known is that only a single case¹ of intra vascular metastatic melanoma (IVMM), and thirty six cases² of extra vascular metastatic melanoma (EVMM) of GSV have been reported till date.

*Correspondence to:

Dr. Mahmood Ali Sayed,
Assistant Professor,
Department of Pathology,
Jaipur National University Institute of Medical Sciences and Research Centre, Jagatpura, Jaipur, Rajasthan, India.

Article History:

Received: 15-07-2019, **Revised:** 12-08-2019, **Accepted:** 26-09-2019

Access this article online	
Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2019.5.5.034	

INTRODUCTION

We report this very rare case of metastatic melanoma along the wall of GSV, showing intra and extra vascular metastasis. By far only a single case¹ of IVMM of GSV have been reported and a series of thirty six invasive melanoma cases ascertained for the presence of the histopathological characteristic of angiotropism i.e. showing EVMM.²

Melanoma, also known as malignant melanoma, is a type of cancer that develops from the pigment-containing cells known as melanocytes.¹ Cutaneous melanoma (originating in the skin) grows and spreads in two phases called the radial (across surface of skin) and vertical (invades deeper layers), growth phases. It has the ability to enter either the blood stream or lymphatic system

and spread to distant parts of the body (Metastatic Melanoma). For hematogenous spread to take place, melanoma cells must break away from the original tumour, find their way through a blood vessel wall and into the blood stream, from where they lodge in a blood vessel, and are able to break through the blood vessel wall and then form a secondary tumour.

CASE REPORT

A 60 years old male presented with multiple swellings upper left thigh since one and a half year, and was suspected of thrombophlebitis. The swelling started at inguinal region, which was gradual on onset, progressive in course, increased in size

extending downwards along other swellings upto the ankle within 10 months. No site of primary lesion (cutaneous melanoma) was identified, as in many cases, the primary tumor can't be found on the skin. It may be either too small to be detected, or more commonly, it resolves on its own. The body's immune system is capable of eliminating small melanoma tumors on the skin. No H/O Pain, fever, trauma or weight loss. H/O Smoking +nt.

On examination, multiple swellings left leg at medial thigh, soft, cystic, non-tender, largest ms. 6x2 cm, associated with serous discharge from skin. All Vitals & other systemic examinations normal. No any enlarged Lymph Node or cutaneous lesion found.

On investigations, Lower limb venogram - showed multiple subcutaneous capillaries. And haemangioma was suspected. No signs of DVT. All deep veins appear normal in course and Caliber. Chest X-Ray was Normal. C.T. Angiogram showed normal arterial and venous blood flow. [Figure 1]

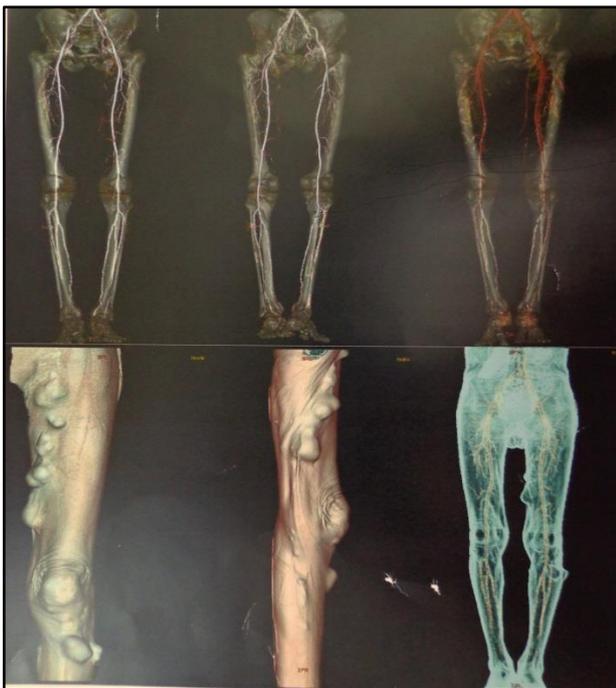


Fig 1: C.T. Angiogram showing normal arterial and venous flow, Surface pictures showing multiple swellings over the thigh.

TLC was 12,000/cumm. ECG showed, LBBB.

On surgery, patient was operated. All swellings, along part of saphenous vein till the knee, and small part of skin were excised under G.A.

Macroscopic – greyish white to greyish brown long tubular soft tissue piece measuring 21x4.5x2cm with multiple large cystic swellings. Largest measuring 6x2cm. A small part of gross 0.8x0.8cm was skin covered. [Figure 2]

Microscopic – Hematoxylin and eosin sections given from various sites showed features of malignant neoplasms (Melanoma). Large round, ovoid to epithelioid tumor cells with abundant acidophilic, finely granular cytoplasm, arranged in pseudoalveolar and pseudopapillary arrangement. Cells show nuclear pleomorphism and a single prominent nucleoli. [Figure 3].

A small area in a section showed few melanocytic granules. Some sections showed the tumor cells, on both sides, i.e. inside and outside the venous wall, showing intra and extra vascular metastasis. [Figure 4].



Fig 2: Gross, Tubular soft tissue piece with multiple swellings (one swelling skin covered), along part of saphenous vein excised.

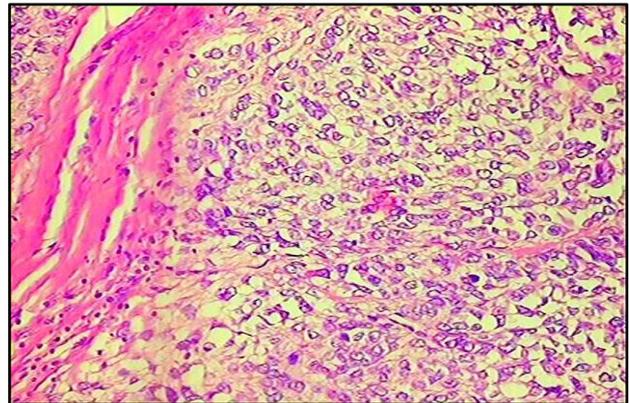


Fig 3: H & E stained section showing round to epithelioid shaped tumor cells.

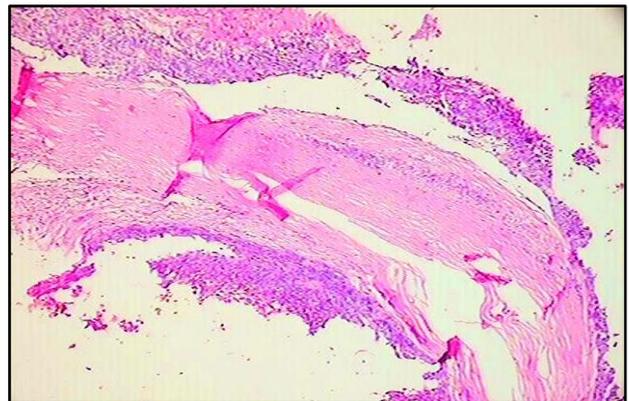


Fig 4: H & E stained section showing tumor cells lying both inside and outside the wall of vein.

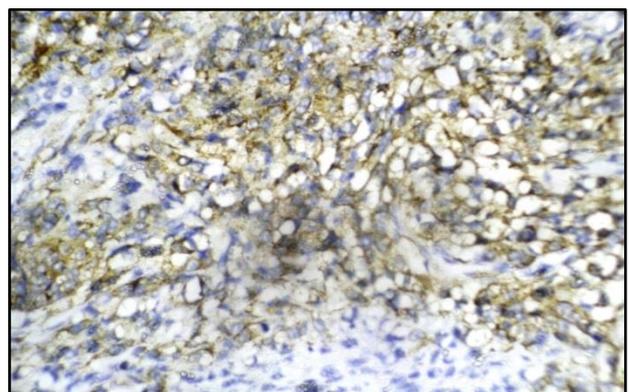


Fig 5: HMB45 Positive section (x400). Courtesy of Dr. Sashi Singhvi, Patho. care and research centre, Jaipur.

Immunohistochemistry – (HRP Polymer), Markers HMB45 [Figure 5], S100 & Vimentin are strong immunoreactive. CK PAN is focal immunoreactive. CK7, CK20, EMA, CEA, SMA, CD68, CD99, Chromogranin, synaptophysin and LCA are negative. Impression - Amelanotic Melanoma.

DISCUSSION

In our case, the primary tumor can't be found on the skin. It may be either too small to be detected, or more commonly, it resolved on its own. The body's immune system is capable of eliminating small melanoma tumors on the skin. Rarely there is a subset of melanomas that originate in areas of melanin-producing cells, such as in the back of the eye, in gall bladder and intestinal system.

Malignant melanoma spreads by growing along the dermo-epidermal junction and upper dermis, and later by invading the deep dermis, the sub cutis and deeper structures. Here as melanoma is lying within the dermis and sparing the epidermis is suggestive of being metastatic. It was noted that melanoma cells are located under endothelium entangled in matrix-containing laminin.⁴

This concept suggests that melanoma cells travel along external surfaces of vessels rather than in their lumen.⁵ This model was called 'extravascular migratory metastasis' or 'angiotropism'.⁵ Melanomas show a remarkable tendency for vascular invasion ("angiotropic malignant melanoma").⁶

By far only a single case of IVMM of GSV and thirty six cases of EVMM of GSV have been reported. In our case melanoma cells were seen both inside and outside of the wall of GSV, and in the dermis.

What's new, in our case is that we have one of the rarest case showing occurrence of both 'Intravascular and Extravascular Metastatic Melanoma of GSV', in a single individual, with absence of any known cutaneous lesion.

REFERENCES

1. Saint-Cyr I, Boisseau-Garsaud AM, Pont F, Cales-Quist D, Helenon R, Chinavong T. Dept. of Dermatology, Centre Hospitalier Universitaire de Fort de France, Martinique, French West Indies Int J Dermatol 2004 Aug; 43(8):590-2.
2. Barnhill RL, Lugassy C. Dept. of Dermatology, George Washington University Medical Center, Washington, DC, USA. Pathology. 2004 Oct;36(5):485-90.
3. "Melanoma Treatment—for health professionals (PDQ®)". National Cancer Institute. June 26, 2015. Archived from the original on 4 July 2015. Retrieved 30 June 2015.
4. Lugassy C, Eyden BP, Christensen L, Escande JP. Angio-tumoral complex in human malignant melanoma characterised by free laminin: ultrastructural and immunohistochemical observations. J Submicrosc Cytol Pathol. 1997;29(1):19–28.
5. Lugassy C, Barnhill RL. Angiotropic melanoma and extravascular migratory metastasis: a review. Adv Anat Pathol. 2007;14(3):195–201.
6. Shea CR, Kline MA, Lugo J. Angiotropic metastatic malign. Melanoma, AM J Dermatopathol 1995, 17 : 58-62.

Source of Support: Nil. **Conflict of Interest:** None Declared.

Copyright: © the author(s) and publisher. IJMRP is an official publication of Ibn Sina Academy of Medieval Medicine & Sciences, registered in 2001 under Indian Trusts Act, 1882. This is an open access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Cite this article as: Mahmood Ali Sayed, Narayani Joshi, Abha Mathur. Intravascular and Extravascular Migratory, Metastatic Melanoma of the Great Saphenous Vein. Int J Med Res Prof. 2019 Sept; 5(5):155-57. DOI:10.21276/ijmrp.2019.5.5.034