

Postoperative Recurrent Cutaneous Malignant Melanoma: A Report of Five Cases

Ibrahim Jabeal¹@, Mohamed Hanesh¹, Suwsun Dribika² and Asma Ahmed³

¹Department of Surgery Faculty of Medicine University of Tripoli- Tripoli Libya

²Department of Pathology; ³Department of Breast and Endocrine Surgery, Tripoli Medical center, Libya

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ABSTRACT

Malignant melanoma is a neoplasm of the cells that develops from melanocytes. The annual incidence of melanoma has increased dramatically over the past few decades and various medical imaging techniques are the best tools for diagnosis: Chest radiography, M.R.I of the brain, Ultrasound and Computerized Tomography. The Positron Emission Tomography (PET) is considered to be one of the best imaging techniques for identifying sites of metastasis. Surgery is the definitive treatment for early stage melanoma whilst medical management is generally reserved for adjuvant treatment of advanced Melanoma.

The objective of our study is to demonstrate the importance of regular follow up and scanning, especially with PET scanning, (taking into consideration that in the Tripoli Medical Center, there is a new PET machine which commenced working in 2014). For the early detection of melanoma recurrence and to determine the best tool of investigation which can be used for follow up in the postoperative malignant melanoma, we studied five cases of postoperative cutaneous malignant melanoma. All five cases were treated with total excision of the primary tumor with a safe margin and no local recurrence of the tumor was observed, however, loco-regional lymph node metastasis was observed with a mean time of recurrence of the tumor of two months from the first surgery. All our cases had no regular follow up.

In conclusion: regular follow up of postoperative cutaneous malignant melanoma is mandatory. A guideline should be established in Libya and the PET scan should be used as one of the tools for early detection of metastatic malignant melanoma.

Keywords - Cutaneous Malignant Melanoma; Recurrent; PET.

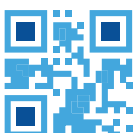
INTRODUCTION

Melanoma is a malignant tumor that arises from melanocytic cells and primarily involves the skin^{1,2}, although melanomas can also arise in the eye (uvea, conjunctiva and ciliary body), meninges and on various mucosal surfaces. While melanomas are usually heavily pigmented, they can be also be amelanotic. Importantly, even small tumors may have a tendency towards metastasis and thus a relatively unfavorable prognosis; melanomas account for 90% of the deaths associated with cutaneous tumours.^{1,2}

The incidence of melanoma is increasing worldwide in white populations, especially where fair-skinned people receive excessive sun exposure.^{3,4} In Europe, the incidence rate ranges from 10 to 20 per 100,000 of the population; in the USA it is 20-30 per 100,000 and in Australia, where the highest incidence is observed, the rate is 50-60 per 100,000.⁵ In Libya^{6,7} the incidence of skin tumors, including cutaneous malignant melanoma, is 2.5 in 100,000. Populations of individuals with high numbers of common naevi and those with large congenital naevi, multiple and/or atypical naevi (dysplastic naevi) are at greater risk.^{8,9}

In addition to these genetic and constitutional factors, the most important exogenous factor is exposure to UV irradiation, particularly intermittent sun exposure.^{10,11}

Cutaneous melanoma (CM) is potentially the most dangerous form of skin tumor and carries 90% of skin cancer mortality.^{1,2} A unique collaboration of multi-disciplinary experts from the European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO) and the European Organization of Research and Treatment of Cancer (EORTC) was formed to make recommendations on CM diagnosis and treatment, based on systematic literature reviews and the experts' experience. Diagnosis is made clinically and staging is based upon the AJCC system. CMs are excised with one to two centimeter safety margins.¹² Sentinel lymph node dissection (SLND) is routinely offered as a staging procedure in patients with tumors of more than 1mm in thickness, although there is as yet no clear survival benefit for this approach.¹ Interferon- α treatment may be offered to patients with stage II and III melanoma as an adjuvant therapy, as this treatment increases at least the disease-free survival (DFS) and less clear the overall survival (OS) time.¹³ For distant metastasis, all options of surgical



therapy have to be considered thoroughly. In the absence of surgical options, systemic treatment is indicated. BRAF inhibitors such as vemurafenib for BRAF mutated patients as well as the CTLA-4 antibody, Ipilimumab, offer new therapeutic opportunities apart from conventional chemotherapy. Therapeutic decisions in stage IV patients should be primarily made by an interdisciplinary oncology team 'tumors board'.¹¹

The primary treatment of melanoma is surgical excision biopsy to give the dermato-pathologist and pathologist an optimal specimen and to allow evaluation of the excision margins for residual tumor. The following case reports include five cases of regional lymph node recurrence of cutaneous malignant melanoma:-

Case Report 1

A 59 year old female Libyan patient had a black colored swelling on her left sole for 3 months duration, there were no other complaints and no other findings on clinical examination as well as on investigation. Wide local excision of the swelling was conducted on 31.01.2012 and her histopathology study finding was malignant melanoma and with immunohisto-chemistry, the Breslow of 4mm in depth, the tumor cells were positive for Anti-Mart, Melanoma PS100, vimentin focally positive for the anti CD 117 (Figure 1a,b and c). The patient had no follow up since surgery. In May 2014, the patient presented with a non-tender mass 10cm × 5cm in her left inguinal region. On True-cut biopsy, the result showed malignant melanoma and a C.T. scan revealed multiple malignant melanoma in both lungs.

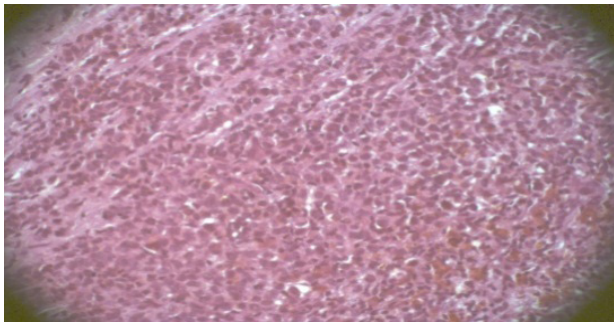


Figure 1a: Sheets and nests of malignant cells with many show melanin in the cytoplasm.

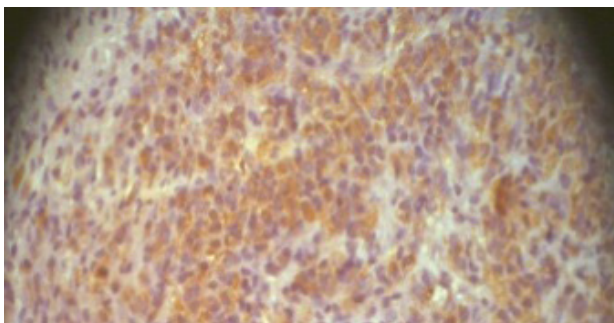


Figure 1b: Same tumor as in figure 1a; shows cytoplasmic staining with the S100 protein (immunostain), which is sensitive but not specific for melanoma.

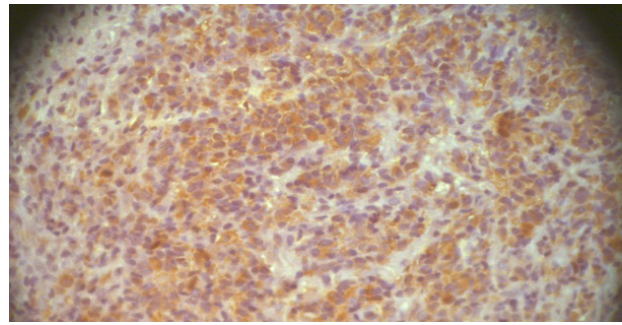


Figure 1c: Same tumour as in figure 1a, shows strong positivity to HMB-45 immunostain, highly specific for melanoma.

Case Report 2

A 24 year old male Libyan patient presented with an aggressive form of psoriasis with a black colored swelling in the left lumbar region which had increased in size. Complete excision of the swelling was performed on 3rd September 2013 and the histopathology showed a superficial spreading melanoma and the Clark was level (4) with Breslow group (3) and 1.5mm in depth (Figure 2). The patient had had no follow up since surgery and on June 2014 the patient presented with a non-tender mass of 2cm × 3cm in the left inguinal region.

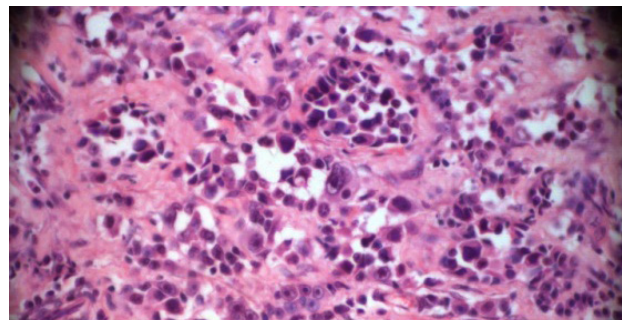
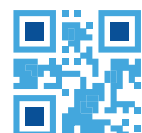


Figure 2: Inguinal lymph node infiltrated by nests of neoplastic melanocytes with prominent nucleoli, typical of melanoma.

Case Report 3

A 68 year old male Libyan patient presented with the black coloration of the right big toe. The toe was amputated and histopathology of malignant melanoma was identified. Elective node dissection (radical clearance) of the inguinal group of lymph nodes was also employed. Later, the patient developed anal cancer where abdominoperineal resection was conducted followed by adjuvant therapy with chemotherapy and radiotherapy. The patient then developed an intestinal obstruction which was treated conservatively; upper gastrointestinal endoscopy was performed which revealed multiple raised lesions with a black colored mass in the first part of the duodenum and the histopathology identified it as a metastatic melanoma of the duodenum (Figures 3a and b).



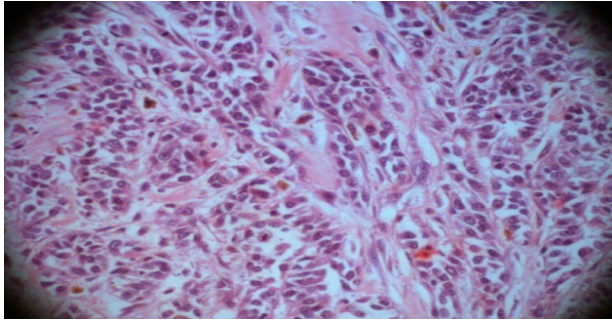


Figure 3a: Inguinal lymph node infiltrated by nests of neoplastic melanocytes with prominent nucleoli, typical of melanoma.

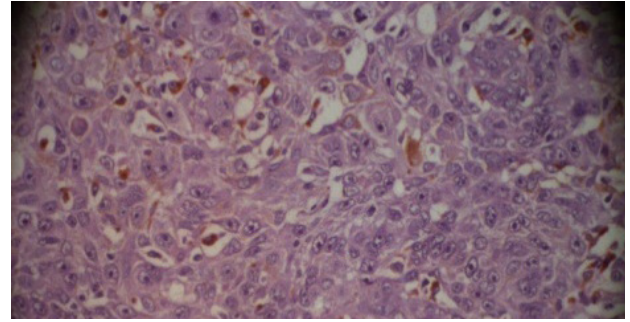


Figure 5: Section from the inguinal lymph node shows extensive infiltration by large neoplastic melanocytes with the typical prominent inclusion-like nucleoli and cytoplasmic melanin pigment.

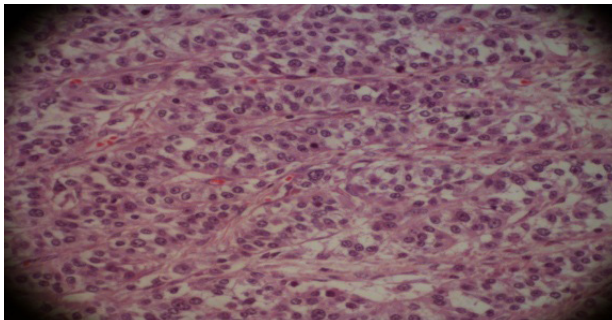


Figure 3b: Typical picture of melanoma show nests of melanocytes with prominent nucleoli.

Case Report 4

A 35 year old female patient presented to the cardiology OPD with an inguinal mass, the histopathology results showed that this was a lymph node metastasis of malignant melanoma, confirmed by IHC (Figure 4).

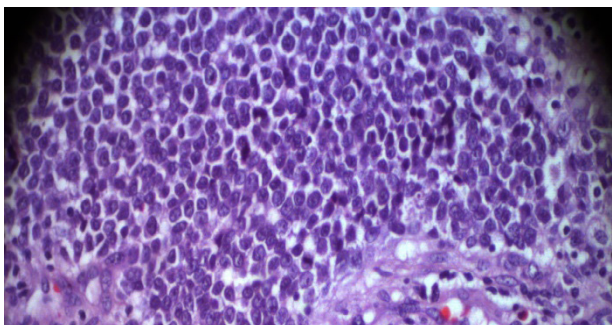


Figure 4: H and E stain of the inguinal lymph node shows infiltration by sheets and nests of malignant cells with prominent nucleoli and high mitotic activity. The tumour was positive for HMB-45.

Case Report 5

A 39 year old female presented on November 2006 with a right inguinal swelling. She gave a history of malignant melanoma, excised from the right thigh in 2005. The inguinal mass was excised in November 2008 and the histopathology result showed metastatic malignant melanoma in the inguinal lymph node with IHC positive HMB 45 (Figure 5).

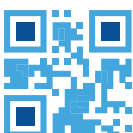
DISCUSSION

Although malignant melanoma accounts for only approximately 5% of skin cancer, its incidence has increased by 5-7% yearly and it is responsible for 3 times as many deaths each year as non-malignant skin cancer worldwide and this has increased at a faster rate than any other cancer, except lung cancer in women.^{1,2} Queensland in Australia has the highest incidence of melanoma in the world, approximately 57 cases per 100,000 people per year.¹⁴ Recurrence is most frequently seen within the first 2-3 years after the initial treatment, but these patients have a lifelong risk of relapse.¹⁵ The prognosis is highly dependent on lymph node involvement and distance metastasis accentuates the importance of close surveillance to identify disease progression at an early stage and thereby detect recurrence amenable to treatment.⁵

In this study, all five cases were treated with total excision of the primary tumor with a safe margin and there was no local recurrence of the tumor. The mean time of recurrence of the tumor in the loco-regional lymph node was two months from the first surgery and all five cases had no regular follow up consultations. Positron emission tomography (PET) has already been proven to be one of the most useful tools in the staging of cutaneous malignant melanomas with a mean sensitivity of 96% and specificity of 92%, therefore, PET has good diagnostic value in the early detection¹⁶⁻¹⁷ and follow up of melanomas. However, in our cases, no patients came for follow up and so none of them had PET therapy although PET is available at the TMC.

CONCLUSION

A guideline for the treatment of melanoma should be established in Libya and the regular follow up of postoperative cutaneous malignant melanoma should be made mandatory. The use of PET has been found to be one of the most important tools in the early detection of metastatic malignant melanoma. In Libya, we need to have at least 3 PET facilities (in Tripoli, Benghazi and Sabha) to be used in the follow up of all types of cancer and, in addition, health education is essential for the early diagnosis and follow up of malignant melanoma.



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