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Medicine for Managers

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Melanoma

A malignant melanoma is a potentially serious type of skin cancer which is increasing in incidence in the United Kingdom. Indeed over the last 30 years, it has risen more quickly than any other common cancer. Overexposure to sun is an important factor and, with climate change and increasing sunshine, the risk will continue to increase.

It develops as a result of malignant change in melanocytes which are pigment-producing cells in the basal layers of the outer skin (the epidermis).

The melanocytes produce a pigment called melanin which normally protects the skin from the damaging effects of ultraviolet radiation. Those people with white skin are much more vulnerable to damage by ultraviolet radiation than those with brown or black skin.

A non-cancerous growth of melanocytes results in the formation of moles (medically known as benign melanocytic naevi) and freckles (lentigines).

However, if the melanocytes transform into malignant cells, their growth results in melanomas which may occur on any area of skin.
They become invasive after malignant transformation and they penetrate through the epidermis into the underlying tissue (dermis) and beyond.

They are described as:

- ***In situ***, if the tumour is confined within the epidermis (outermost skin layer)
- ***Invasive***, if the tumour has spread into the underlying dermis (the skin layer below the epidermis which contains blood vessels, lymphatics, nerves, etc.)
- ***Metastatic***, if the tumour has spread distantly to other tissues

Melanoma accounted for 2,333 deaths between 2016-18, representing 1% of all cancer deaths. The incidence is increasing, from about 10,700 new cases in 2007 to 17,850 in 2018.

1% of cases occur in the under-25s, about 10% in 25-44s, about 40% in 45-64s, 25% in 65-74s and the remaining 25% in those over 75.

The peak incidence rate for the disease is between 85 and 89. The incidence is approximately equal in men and women and is more likely to occur on the head, neck and trunk of men and the legs and the arms in women. It

is reportedly the fifth most common cancer in the UK.

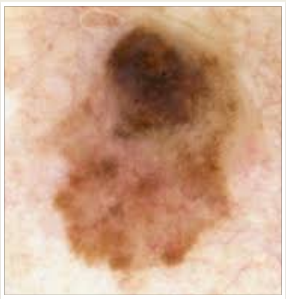
Different types are recognised but essentially it depends on whether their growth is confined to the skin or they spread from their original site and whether they grow slowly or they grow rapidly.

Although usually occurring on exposed skin they can also develop on the palm, sole or under nails, in which case they are often recognised late, or occasionally in the eye, nervous system, lip, penis and the anal or oral mucosa.

Once the tumour has reached beyond the skin, spread is through the lymph system to lymph nodes or in the blood stream. It is a dangerous cancer and survival depends on early diagnosis and effective treatment.

The most common type of melanoma is the ***superficial spreading melanoma***. The risk factors for development of this form of the disease are:

- Increasing age



- Previous skin cancer or melanoma
- Multiple moles
- A strong family history of the disease
- White skin which burns easily
- Parkinson's disease

Therefore fair-skinned, red haired people with freckles should take particular care in the sun. Dark-skinned people are only rarely affected. If an individual has more than one hundred naevi (moles), the risk of developing a melanoma is increased by 5-10 times.

Sun exposure increases risk and it appears that childhood exposure and short, severe episodes of exposure are more dangerous. Sunbed use may also increase risk.

The recognition of possible malignant change is crucial to minimise the risk of spread. There has been much patient education and aide-memoires to help in recognising the change.

A useful aide-memoire for melanoma

A*symmetry- draw line through middle of mole. Two halves do not match*

B*orders are uneven*

C*olour is variable – different shades of brown*

D*iameter is usually larger than a pencil eraser*

E*volving- size, shape, colour, elevation, bleeding, itching, crusting*

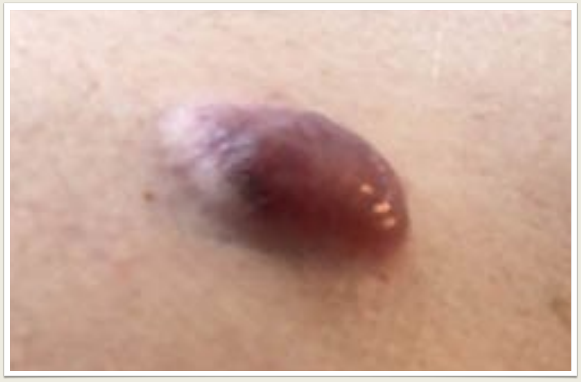
Things to look out for are

- ✓ Change in size or shape over weeks or months, and if the lesion is greater than 7 mm in diameter.
- ✓ Change in colour with irregular pigmentation and different shades of colour
- ✓ Change in outline often sharp but irregular (like an island on a map)
- ✓ Itching and bleeding
- ✓ Inflammation and oozing.

None of these changes is pathognomonic. (entirely reliable as an identifier of disease).

The superficial spreading form of melanoma spreads within the epidermis and grows horizontally within the layer. A ***nodular***

melanoma may grow vertically into the dermis and therefore is more dangerous. Once in the dermis, it spreads via the lymphatics or blood stream more distantly. This is called metastatic spread.



Melanomas may develop from normal looking skin or from an existing mole or freckle.

Investigation and diagnosis of melanoma is principally initially by visual inspection and excision of the lesion for histological diagnosis.

Any pigmented lesion that is excised should be sent for histology. If a melanoma is suspected clinically removal in primary care should be avoided. Normally they are excised with a wide margin of apparently healthy skin to minimise the risk of recurrence. If the patient has evidence of spread of the disease, they should of course be managed by a specialist oncologist

Management of a diagnosed melanoma depends on the nature and type of the tumour, its size and spread.

If it is diagnosed at an early stage, surgery is usually successful. Treatment, if not diagnosed until it is advanced, is directed at slowing spread and managing any symptoms.

The histopathologist, who assesses the melanoma, will stage it according to the degree of invasion and spread.

The stage ranges from 1 (where the melanoma is superficial and localised) to 4 (where it has spread widely or distantly).

Five year survival of patients with stage 1 is virtually 100%, and is 30% for patients diagnosed with stage 4.

Treatment of malignant melanoma beyond local wide excision involves the use of medicines which target specific genetic changes in the melanoma and has improved in recent years.

There are new drugs using immunotherapy and a number of experimental treatments including:

- BRAF inhibitors such as dabrafenib
- MEK inhibitors such as trametinib

Radiotherapy has little effect on most types and locations of melanoma.

Prevention is particularly important, given the disappointing results that accompany late diagnosis and frequently rapid spread of the tumour.

Avoidance of excessive sun exposure is of importance in avoiding melanoma and protects against other forms of skin cancer too.

Anyone going into the sun should use a high factor protection and avoid actual sunburn.

It is advised that sunbeds should be used with caution or avoided, particularly in individuals with multiple naevi, pale skin and red hair.

Advice on skin monitoring is also essential, particularly in vulnerable people and those with family history and everyone, particularly if pale skinned, should examine their own skin from top to toe on a regular basis and take photographs of areas of moles or freckles to compare over time.

Vigilance is the watchword for this dangerous cancer if the inexorable increase in the disease is to be prevented.

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