TRANSCRIPT

S1.E4. Melanoma (Part 1)

Tom: Hello and welcome to Spot Diagnosis, a podcast about all things dermatological. Brought to you by the Skin Health Institute in Melbourne, Australia. I am Dr. Tom Kovi.

Professor Alvin Chong: I'm Associate Professor Alvin Chong. We are your co-hosts.

Tom: This episode we'll be talking about melanoma. It's one of the fields in dermatology that's seen significant advances in the last decade. Today, we are joined by Associate Professor Victoria Mar. Professor Mar is the Director of the Victorian Melanoma Service at the Alfred Health. She has authored multiple chapters of Australian Melanoma Guidelines and is on the executive committee of the Melanoma Skin Cancer Trust Group. Welcome and thank you for sharing your time with us today, Professor Mar.

Professor Victoria Mar: Thanks, Tom. Thanks for having me.

Alvin: Because melanoma is such a big topic, we will be splitting it over two podcasts. For this, the first podcast, we will talk about the epidemiology and diagnosis of melanoma. For the second podcast we will be talking about treatment and prevention of melanoma.

We move on to the epidemiology first. But before we do that, Tori, can you take tell us what is a melanoma?

Victoria: Put really simply, melanoma is a cancer of melanocytes, which are the pigment cells in our skin. Melanocytes, if you allow me just to get a little bit geeky on you to start with, are pretty cool cells actually in the skin, they have a cluster of about 20 keratinocytes that they look after. What they do in response to UV is they have pigment called melanin that they transfer down to keratinocytes and those melanosomes form a little cap or umbrella over the nucleus of the keratinocytes to protect them from UV radiation.

Alvin: How is melanoma different from other skin cancers?

Victoria: Melanoma being a skin cancer of melanocytes, affects those cells and those cells can metastasise if the melanoma becomes invasive, whereas other skin cancers, whilst they're much more common, they don't tend to behave quite so dangerously. Basal cell cancers and squamous cell cancers are both cancers of keratinocytes. Basal cell cancers typically don't metastasize. Squamous cell cancers can if they're on the head and neck, but the risks are much lower.

Alvin: In terms of deaths caused, what is the scale of the problem in terms of melanoma deaths in Australia?

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Victoria: Well, melanoma is one of the most common cancers in Australia. It's the third most common for males and for females, so the fourth most common invasive cancer overall. In terms of deaths, that equates to about 2,000 deaths per year. That's more than the national road toll.

Alvin: Wow, that is a lot deaths. Are there some geographical differences in melanomas in Australia?

Victoria: Yes, the incidence of melanoma will increase according to latitude. People in Queensland are at higher risk because of the higher UV exposure there compared to people in Victoria or Tasmania, which is in the south of the country. The UV index in Queensland really sits above three for most of the year round, whereas in the southern states, it will be lower than three over the winter months, at least,

Alvin: Tori, can you tell us who is at risk of developing melanoma?

Victoria: There are a number of risk factors for melanoma and really, the common ones that we think about relate to phenotype, which is the skin type that you have, how easily your skin burns, as well as the number of moles that you have. Typically people with large numbers of moles or dysplastic moles are at higher risk. Then there are people who have red hair and freckling, are at increased risk as well and those people often have a genetic variant called an MC1R variant that gives them that phenotype, red hair and freckling. People who've had a lot of sun exposure obviously are at increased risk as well. That'll manifest itself as multiple actinic keratoses, basal cell cancer, and squamous cell cancers. If you've been growing other keratinocyte malignancies, you're at increased risk of melanoma as well.

Alvin: Do you see much melanoma in people of darker complexion?

Victoria: We do see it occasionally, but it's much less common. Having that darker skin phenotype is protective to a degree. It's more common to have certain subtypes of melanoma in darker skin people, so they're a bit more prone to acral melanomas and subungual melanomas.

Alvin: I know that having a family history of melanoma is a risk factor. Can you tell us a little bit about familial melanoma, how common is it?

Victoria: Familial melanoma doesn't play as big a role in Australia as it does in other countries where the UV index is not as high. Most of our melanomas are from the UV exposure that we have in this country. Familial melanoma really makes up a small proportion. There are certain genes that are associated with an increased risk. The two most common are the CDKN2A gene and CDK4 gene. In the general population, it's uncommon to find that it would be only found in less than 0.1% of people in the general population. If you have a very strong family history, you've got a higher chance of finding those mutations. We recommend screening for genetic changes in patients who have a very strong family history which is defined actually as three or more family members affected, which is actually quite high.

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Alvin: That's three or more first degree family members affected?

Victoria: Over three first or second degree relatives affected and particularly if patients are developing melanomas at a young age and there are other cancers in the family like pancreatic cancer.

Alvin: Tell us about the melanoma risk calculator.

Victoria: We have developed a melanoma risk calculator that's on our website at The Alfred that can help patients understand a little bit more about their risk factors. It can tell you about each risk factor and take you through it and then, at the end, it will give you an estimated risk over five years of developing melanoma. It is an estimate, but it gives you an idea of how carefully you should be checking your skin and having surveillance for the possibility of skin cancers.

Alvin: One of the things that we keep reading about is how melanomas are quite dangerous and it can lead to deaths but I know that the majority of melanomas in the community are diagnosed early and hence are curable. Victoria, can you tell us a little bit about the cure rates of melanoma.

Victoria: Melanoma, you're quite right, is imminently curable with surgery for up to 90% of cases. In fact, if it's caught really early, particularly if it's in situ, melanoma, which means it's confined to the epidermis and it hasn't started to invade yet, then there is no risk of spread. That's where we want to diagnose melanoma. If it has started to invade, the thickness gives us an idea of the likelihood of spread and we would stage people if their thickness is over a millimeter. We would offer a procedure called a sentinel node biopsy to see if there's any early spread to lymph nodes which would make that Stage 3 melanoma, which has an increased risk of more distant metastatic disease.

Alvin: So, would you say that about 90% of melanomas diagnosed in the community are thin melanomas?

Victoria: Yes, most of them are thin melanomas. Then there are a proportion that are thick. They either are thick because they've been on the skin for a long time, but a lot of thick melanomas also are ones that have grown quite rapidly, and there's quite a narrow window of opportunity for those lesions to detect them early. They're ones that can present a little bit atypically as well.

Tom: Let's talk a little bit about the clinical features in the diagnosis of melanoma. Can you please tell us about what are the features of melanoma?

Victoria: Tom, it depends which subtype we're talking about. We like to divide melanoma into subtypes, really, because they have different clinical presentations and it makes us aware of what we need to be looking out for. The most common subtype are superficial spreading subtypes. They account for about 60% to 70% of cases. They're the ones that we would think of as the ugly ducklings that you can spot on the skin, they tend to stand out, they tend to be large diameter and they conform to what we call the ABCD rule, which is asymmetry, border regularity, color

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variation and larger diameter. They tend to be fairly easily diagnosed and generally, we do a pretty good job of recognising them.

The other subtype is nodular melanoma. It accounts for about 14 to 15% of cases but it is much more difficult to diagnose. These are types that tend to grow rapidly in a vertical growth phase and have a shorter radial growth phase - a very narrow window of opportunity to pick them up early. They're commonly non-pigmented as well, so they can present as a pink plaque or nodule on the skin and grow quickly.

Other subtypes are Lentigo maligna and Lentigo maligna melanoma, they tend to occur on really chronically sun damaged skin on the head and neck, usually of older patients. Then there's the Acral lentiginous melanomas which occur on the soles of the feet or the palms of the hands and, occasionally, in subungual areas.

Tom: Thank you for that summary. **That's now tip number one. Nodular melanoma is an aggressive form of melanoma. It grows quickly and can be life threatening if not detected and treated promptly. Be aware of a lump that is rapidly enlarging over weeks to months. Remember that one third of these melanomas are not pigmented.**

(Music)

Alvin: I'm a big fan of dermoscopy, in fact, I teach it in our GP workshops. Can you tell us a bit about the role of dermoscopy in diagnosing melanomas, in particular?

Victoria: Dermoscopy is our saviour, I think, when it comes to diagnosing melanoma because it makes things look much more obvious. It magnifies them for us and we can see deeper structures in the lesion that we wouldn't be able to see with the naked eye. It's really important if you have an interest in skin cancer diagnosis to get good at dermoscopy. It's really helpful for looking at pigmented lesions but also non-pigmented lesions. A tip actually for looking at non-pigmented lesions, things that are pinker, to get an alcohol swab and give them a really good rub because that'll bring any of the vessels out and you can see them and appreciate them much more easily and have a look at what patterns are there. You're looking at a few different things, you're looking at the pattern of the pigmentation and pigment network and how regular or irregular it is.

There are certain diagnostic features that we look for in melanoma, and you're also looking at the vascular pattern, different types of vessels that we might see in both benign lesions or malignant lesions and it's really good to become familiar with these. It's also really helpful for seborrheic keratoses, because seborrheic keratoses are really common, and they can fool us. Dermoscopy can make them very easily diagnosed by looking for simple things like comedone-like areas that will make the diagnosis obvious.

Alvin: In fact, I remember reading a recent meta-analysis showing that the use of dermoscopy will reduce the benign-to-malignant ratio of pigmented lesions and also you can diagnose melanomas at an earlier stage using dermoscopy. So, definitely very useful to learn. The other thing I want to

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talk about is the role of a diagnostic biopsy. When you see a pigmented lesion, the current recommendation is to do a complete excisional biopsy, if possible, with a narrow margin. Can you tell us a little bit more about the pros and cons, or why this is the case?

Victoria: Yes, the most important thing when we are doing an assessment and having a look at a lesion of concern is to make an accurate diagnosis. That really goes without saying, but the biopsy technique that we use will have a big impact on whether or not we're able to do that. If you think from the pathologist perspective, you have to be kind to the pathologist, you have to give them the whole lesion. They'll want to make that assessment of the whole lesion before they come down on benign or malignant. The best way to do that is to do an excisional biopsy, provide the whole lesion so that they can make that assessment.

Sometimes though, it's not possible obviously. Lesions that are large, where you can't excise the whole thing without doing a flap or a graft which is not ideal, lesions on the face of cosmetically sensitive areas, it's going to be very difficult to excise lesion in the first instance. There are times when partial biopsies are necessary. Lentigo maligna on the face for instance, particularly for flat areas, a shave biopsy can be really useful and shave biopsies are quite good in this setting.

Anything that is clearly invasive though, we also want to get a good idea of the depth, because that informs both prognosis and it also helps us plan our further surgery and treatment. Anything that has thickness to it, we can do an incisional biopsy, either an incisional ellipse of the worst part of the lesion or a large punch of an obvious melanoma. Just be cautious with punch biopsies and particularly small punch biopsies. There is an increased risk of a sampling error if we use this technique. A false negative misdiagnosis is much more common with the use of punch biopsies and also shave biopsy but to a lesser degree than using an excisional biopsy which we should do if we can.

Tom: That's our tip number two. If possible, excisional biopsy is the ideal method of biopsy for pigmented lesions to avoid sampling error. There are many things on the pathology report and it can sometimes be very confusing to read the report.

(Music)

Tom: Can you please tell us about what are some of the features that make melanoma a bit more dangerous?

Victoria: There are some fairly key things that we're looking out for on the pathology report. Firstly, it's good to just make sure that there's been a synoptic report provided. This is standard in Australia, and it will give the key features that we look out for that will also help us with staging, so thickness, ulceration and mitotic rate are important parts of the synoptic report.

There will also often be a comment on lymphovascular invasion whether that is present or not. There will be a note on the Clark Level, which often, if patients are given this information can be quite confusing because it's not uncommon that patients see Clark Level IV, and Google that and

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they get it mixed up with stage 4 melanoma and think that they're imminently going to die. Please, when you are explaining a Clark level to patients or the pathology report to patients, it's good to point out that there's a difference between Clark level IV and stage 4 melanoma.

Tom: Okay. Are there any sort of patient factors that might be contributing to how aggressive the melanoma might be?

Victoria: Patients who are immunosuppressed, particularly if they've got other hematological malignancy or they're on immunosuppressant drugs, may have a poorer prognosis just because of their own immune system is not able to fight the cancer as effectively and we know from studies of some of the newer therapies that the immune system is really important in fighting melanoma.

Tom: Thank you very much. This brings us to the end of Part One. Please join us for Part Two on management, prevention and a little bit about artificial intelligence about melanoma.

Alvin: We hope you have enjoyed this podcast. Remember, these podcasts are not meant to replace medical advice. If you have a skin condition that requires attention, we strongly encourage you to see your medical practitioner.

Tom: For those who would like to access some further information on this subject, we have placed a transcript, together with some further education and information resources for you on our website. I also want to do a shout out for the GP education events that we run at the Skin Health Institute. Just go to spotdiagnosis.org.au.

Alvin: Please share spot diagnosis with your friends and colleagues. Rate and review us. Let us know what you think. We would really appreciate your feedback and any suggestions. Thank you for listening.

More information, and other dermatology education resources, can be found on our website at

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