

Dermatology Associates of Plymouth Meeting

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What are Moles?

Moles are benign tumors composed of mole cells. Many myths surround moles; for example, that hairs should not be plucked or that moles should not be removed. These myths need to be clarified.

Moles are so common that they appear on virtually every person. They are present in newborns and increase throughout childhood, reaching a peak growth rate at puberty but continuing into early adulthood. Moles can occur anywhere on the body.

Acquired Moles (Nevi)

Most moles that are acquired during life are less than 1/4 inch in size. Many of those that form in childhood appear to be genetically determined, while those that form later in adult life are now thought to be due to chronic sun damage. Moles that appear after age 40 should be regarded with suspicion. Most people think of a mole as being a dark brown spot, but moles have a much wider range of appearance. They can be raised from the skin and very noticeable, or they may contain dark hairs. Having hairs in a mole doesn't make it more dangerous. Moles can appear anywhere on the skin, alone or grouped. They usually are brown in color and can be various sizes and shapes. Special cells that contain the pigment melanin cause the brown color.

Moles may darken, which can happen after exposure to the sun, pregnancy and sometimes during therapy with certain steroid drugs.

Atypical moles (dysplastic nevi or Clarks nevi)

An estimated one out of every 10 Americans has at least one atypical mole. These moles are larger than common moles, with borders that are irregular and poorly defined. Atypical moles also vary in color, ranging from tan to dark brown shades on a pink background. They have irregular borders that may include notches. They may fade into surrounding skin and include a flat portion level with the skin. These are some of the features that one sees when looking at a melanoma. When a pathologist looks at an atypical mole under the microscope, it has features that are in-between a normal mole and a melanoma.

While atypical moles are considered to be pre-cancerous (more likely to turn into melanoma than regular moles), not everyone who has atypical moles gets melanoma. In fact, most moles -- both ordinary and atypical ones -- never become cancerous. Thus the removal of all atypical nevi is unnecessary. In fact, half of the melanomas found on people with atypical moles arise from normal skin and not an atypical mole. Atypical moles are risk markers for melanoma. They imply a risk in comparison to individuals who do not have these moles.

Clinical features of common melanocytic nevi, atypical moles, and melanomas

Feature	Common melanocytic nevi	Atypical moles	Melanomas
Symmetry	Symmetric	Variable asymmetry (sometimes fried-egg or target shaped)	Usually asymmetric
Border	Regular	Variable; fuzzy or indistinct and irregular, fading into surrounding skin	Irregular, often sharp
Color	Uniform tan or brown	Often variegated with tan, brown, black, red, pink	Variegated with tan, brown, black, red, white, blue
Diameter	Often <6 mm	Often >6 mm, some ≥ 8 mm	Often >6 mm
Surface	Macular to nodular	Some elevated with peripheral macular tan zone (i.e., a "shoulder")	Macular to nodular, often with a "shoulder"
Uniformity	Homogeneous	Heterogeneous	Heterogeneous
No. of moles (all types)	10-40	50-100, often more	Usually increased

Phenotypic traits that increase risk for Melanoma

Freckles
 Fair complexion
 Blond or red hair
 Tendency to sunburn
 Inability to tan
 Light-colored eyes

Management strategies for patients with atypical moles

Management strategies for patients with atypical mole syndrome are based on timely implementation of preventive measures and on maximizing opportunities for early detection of melanoma. The following strategies form the foundation of care in patients with atypical mole syndrome.

Frequent in-office and self-examinations

Visual examination of the skin is an excellent screening tool for identifying moles at increased risk for melanoma and for detecting early melanoma.

In knowing what to watch for and what to expect, you can benefit from understanding the natural history of common moles versus atypical moles. The number of common moles gradually increases from age 6 months to the third decade of life.

In contrast, atypical moles can develop throughout a person's lifetime and, furthermore, they remain dynamic throughout adulthood. One study found that atypical nevi showed evidence of clinical change over time in 51% of adult patients. Patients with atypical mole syndrome should have lifelong total-skin examinations, including the scalp and feet, every 3 to 12 months, depending on risk factors. Melanomas found in patients who are screened in this manner tend to be early and thin and thus have a good prognosis.

Patients who regularly perform examinations of their own skin are likely to discover melanomas at an early stage. This early detection may reduce mortality by as much as 60%. Therefore, patients with atypical mole syndrome should be encouraged to examine their own skin every month.

Additional information on the technique of self-examination and on early signs of melanoma is available from the American Academy of Dermatology (see resource section for web site link).

Regular total-skin examinations

Examination of the total skin surface is needed. One analysis revealed that in patients who undressed completely for skin examination, melanomas were found six times more often than in patients who undressed only partially. As is true of atypical moles, most melanomas occur on clothed body sites.

Screening beginning around puberty

Risk of melanoma begins to increase at about 10 to 12 years of age in patients with atypical mole syndrome. Therefore, surveillance in these patients should begin around puberty.

Photographs for later comparison

Recognizing significant changes in moles in patients who have many lesions can be difficult. Baseline photographs of either an entire area or of individual atypical nevi can be very helpful in this regard. When the photographs are compared with the appearance of nevi on subsequent visits, subtle changes indicative of early melanoma may be identified. Thus, baseline photographs, although not required, may help detect suspicious lesions in their earlier and more treatable phase. Furthermore, excessive biopsies may be avoided, because lack of change in atypical lesions can be confirmed through comparison with baseline photographs.

If we feel that photography is in your best interest, we will refer you to our professional who, via standardized angles, will photograph your entire skin surface. Some insurance companies are starting to support this method of follow up.

Histologic evaluation of suspicious lesions

At times, even experienced dermatologists have difficulty determining the difference between benign, atypical, and malignant lesions through visual inspection. Ideally, for suspected melanoma, the entire mole should be removed so the pathologist can accurately identify the lesion.

Atypical moles do not need to be excised unless melanoma is a concern. They are more often a marker of melanoma than a precursor to the disease. Therefore, excision of all of your atypical moles is not the answer to this problem. Even if every atypical mole were to be excised, only 30% to 40% of potential melanomas would be prevented (figure 6: not shown). Prophylactic excision of atypical moles leads to many unsightly scars and a false sense of security, because 60% to 70% of melanomas in patients with atypical mole syndrome develop in normal skin rather than in an atypical mole.

A special diagnostic method known as dermoscopy is utilized by our physicians. This technique helps differentiate atypical moles from melanomas (20). Oil is applied to the skin overlying the lesion, and a

dermoscope (a hand-held microscope with magnification X 10) is pressed against the lesion. The oil makes the top layer of the skin translucent and allows visualization of structures not apparent to the unaided eye. .

Regular ophthalmologic and complete physical examinations

Patients with atypical mole syndrome are reported to be at increased risk for ocular nevi and melanomas, so they should undergo routine ophthalmologic examinations. Furthermore, they may be at increased risk for basal and squamous cell carcinomas and cancer of the pancreas, breast, lung, and central nervous system. Therefore, complete physical examinations performed at regular intervals are recommended.

Warnings about potential hazards of sun exposure

Patients with atypical mole syndrome are more sensitive to sunlight than the general population. Sunlight contributes to formation of nevi and is implicated as an important factor in the pathogenesis of melanoma. Therefore, exposure to the sun should be avoided or minimized through use of protective measures (see office newsletter section for sunscreen information).

When sun exposure is unavoidable, generous use of sunscreens with a sun protection factor (SPF) of at least 15 is recommended. Most people do not apply sunscreen thickly enough or frequently enough, so the actual protection afforded may be only half of what the product label indicates. Therefore, for added security in patients with atypical mole syndrome, use of sunscreen with an SPF of 30 or more may be advisable.

Sunscreens are merely an adjunct to sun avoidance and are not to be relied on as the sole means of protection. Be careful that their use does not actually increase the risk of melanoma by creating a false sense of security and thus prolonging the time you spend in the sun.

You should be aware that 60% to 80% of lifetime exposure to the sun occurs before age 18 and that protecting and educating your children against excessive sun exposure is vital.

Examination of family members

Because atypical mole syndrome has a genetic link, the risk of atypical moles and melanoma occurring in family members of patients with the syndrome is high. Whenever possible, all family members in the modified nuclear family (i.e., grandparents, parents, aunts, uncles, siblings, offspring) should have total-skin examinations for early evaluation of suspicious lesions.

Summary

Everyone with atypical mole syndrome is at increased risk for malignant melanoma. Care of these patients should focus on lowering this risk and on early detection and treatment if melanoma develops. Prophylactic excision of all atypical nevi is not recommended.

Patients should be warned of the potential hazards of sun exposure, educated in methods of protecting themselves and their children from the sun, and encouraged to do monthly skin self-examinations. Total-skin examinations at regular intervals should be performed in patients with atypical mole syndrome. Frequency depends on the specific risk factors, but a total-skin examination should be completed at least once each year, beginning around puberty, and should be continued for life.

Congenital nevi

Only a few babies, about 1 in 100, are born with a mole, the congenital nevus. These can vary in size from being less than 1/4 inch to covering almost the entire body. Large nevi can vary greatly in size, shape, color, surface texture, and hairiness. Some are reddish-tan; others are almost black. Most are shades of brown. Some have fine downy hair; many have long, thick, darker hair. Some have a permanent "goose bump" appearance.

Nevi measuring 4 inches (10 cm) or more at birth occur in about one in every 20,000 children. Giant

congenital nevi involving much of the body surface are less common, possibly around one in every 200,000 to 500,000 births. Many people with a giant nevus will have anywhere from several to hundreds of smaller "satellite" nevi. In a very few persons with giant moles, nevus cells can also be found in the spinal cord and near the brain, a condition called neurocutaneous melanosis.

The exact risk of melanoma developing in a giant congenital nevus is not known but is thought to be at least 6%. There has not been any melanoma in the satellite nevi, and those on the arms and legs are also less dangerous in general. These cancers tend to occur prior to puberty.

Small and medium sized congenital nevi have a much lower risk of malignant degeneration, perhaps 1/10%. Small congenital nevi rarely turn malignant before puberty. Congenital moles will grow in proportion to body growth. Their color may stay the same, lighten slowly, or darken slowly over time. Changes in growth, in color, in surface texture, pain, bleeding, or itching are all of concern. Any such changes should be evaluated medically if they last longer than a few weeks.

Treatment

Surgical excision should be done where cancer is a reasonable concern. Improving cosmetic appearance is another reason for excision, but all surgery leaves some scarring. Smaller nevi can be "shaved off". Larger ones can be cut out directly and the wound edges sewn together. Much larger nevi may be excised in stages by taking a little more out each time until the entire nevus is removed. This is called "serial excision." Cutting out very large nevi will leave behind a raw area that is too big to be sewn together and must be covered. This can be done with a split thickness skin graft from some other normal area of the body. The skin-grafted area will have varying degrees of scarring and will usually be thinner and more fragile than normal skin.

We will likely refer your child to Children's Hospital if we feel that surgery is an option.