

Pearls in Dermatology

How I manage melanocytic naevi

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Despite advances in laser surgery and intense pulsed light therapy, majority of the pigmented melanocytic naevi are successfully treated by surgical excision with minimal scar formation. Surgical excision is preferred for most melanocytic naevi occurring in Caucasians and acral naevi occurring in Asians. Laser surgery/intense pulse light therapy can be attempted in selected small and superficial naevi with surgical excision reserved for persisting and recurrent naevi.

Keywords: Laser treatment of naevi, melanocytic naevi, moles

Introduction

Removal of dark coloured melanocytic naevi (moles) is a common presenting request of Asian patients. Besides aesthetic reasons, there is frequently a genuine fear of skin cancer in enlarging acquired naevi. The transform rate of melanocytic naevi is not known. Using population-based estimate, Tsao and others from the USA in 2003 suggested that for a 20-year-old person, the lifetime risk of any selected mole transforming into melanoma by age 80 years is approximately 0.03% (1 in 3,164) for men and 0.009% (1 in 10,800) for women.¹ Therefore, the risk of any particular benign appearing mole becoming

melanoma is low, especially in the absence of other associated risks factors.

Despite advances in laser and intense pulsed light (IPL) systems, the treatment of melanocytic naevi are infrequently reported due to the high recurrence rate, the possibility of depressed scar and oncologic concerns. The author prefers to treat all melanocytic naevi in Caucasians and acral (plantar, palmar and nail-bed) melanocytic naevi in Asians with surgical excision. Only selected small, thin and superficial melanocytic naevi in Asians are treated by laser or intense pulsed light therapy. It is noteworthy that shave excision of facial melanocytic naevi in Caucasians is associated with a reported recurrence rate of 15% to 40%.

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Assessment before treatment

The duration (acquired versus congenital), characteristics of the naevi (e.g. colour, shape, presence of hair, growth rate, etc.), recent changes

(e.g. change in size, shape, colour, thickness, ulceration, bleeding, etc.), previous treatments (herbal medications, chemicals, laser, cryotherapy, surgery, etc.) and especially for caucasians, any previous skin cancer surgery and family history of skin cancer are recorded. History of sun exposure, travel and residence history are also noted. Each naevus in question is examined in details with a large magnifying glass under good lighting. The site, size, colour, shape, margin, thickness, homogeneity, surface texture and morphology of the mole are noted. The history and physical examination are directed toward addressing the following issues which may have a bearing in the management of the mole(s):

1. Is this a naevus (mole)?
2. If not, what is the differential diagnosis?
3. If yes, is this an atypical or suspicious naevus that requires histological studies?
4. Can this naevus be easily treated by laser surgery/intense pulsed light therapy?
5. What is the risk of scarring and recurrence after treatment?

Differential diagnosis includes lentigo, seborrhoeic keratosis, naevus sebaceous of Jadassohn, dermatofibroma, keratoacanthoma, verruca vulgaris, pigmented basal cell carcinoma and melanoma. Collecting data from history and physical examination and integrating them with current information and technology will help the doctor to decide on the preferred mode of treatment.

Treatment by excisional surgery

The surgical site is cleansed with a mild cleanser and prepared with a dab of topical anaesthetic cream like the EMLA cream. In a clean treatment room or operating theatre, the surgical site is prepped with aqueous chlorhexidine and draped sterilely. The naevus is anaesthetised with a slow injection of approximately 1 ml of 1% Lignocaine with 1:200,000 epinephrine (epinephrine is

omitted for moles of the digits) with a 30G needle. For small round moles 4 mm or less, an appropriate sized (1.5 mm, 2 mm, 3 mm or 4 mm) round biopsy punch can be used to excise the naevus with a narrow margin. For irregularly shaped mole, the biopsy punch can be used to bite out additional bits of involved edges in order to clear the margin. Alternatively, a Parker knife with No. 11 blade is used to carry out full thickness excision of the naevus with a narrow margin (usually 1 mm or less).

The traditional textbook description of using an 'elliptical excision' is unnecessary and should not be followed since a round defect resulting from excision of large sized naevus 10 mm or less can always be closed without significant 'dog-ear'. Should significant 'dog-ear' be present, it can be adjusted by minor trimming at the time of suturing. Haemostasis with diathermy is seldom required. After visually checking the margin of the defect with magnifying loupe to ascertain the adequacy of the excision, the defect is closed preferably along relaxed skin tension lines (RSTL) either in single layer with interrupted 6 $\bar{0}$ or 7 $\bar{0}$ monofilament nylon sutures or in two layers with an additional inside 6 $\bar{0}$ absorbable suture (e.g. Vicryl, Monocryl) (Figures 1a, b & c). Skin toned (brown coloured) steri-strip is applied for 3 days. The patient is instructed to remove the steri-strip (which can be wet after 24 hours) after 3 days in order to clean the site with a supplied cleanser (e.g. Physiogel or Cetaphil) followed by the application of a topical antibiotic (e.g. Bactroban or Fucidin ointment). Sutures are usually removed between postoperative day 7 and 8. Steri-strip is usually re-applied for a few more days after suture removal. The resultant scar even at day 8 is usually inconspicuous (Figures 2a & b).

Treatment by laser surgery

This is best for benign lentigo. Only selected melanocytic naevi which are small and thin are suitable for laser surgery. Nodular melanocytic

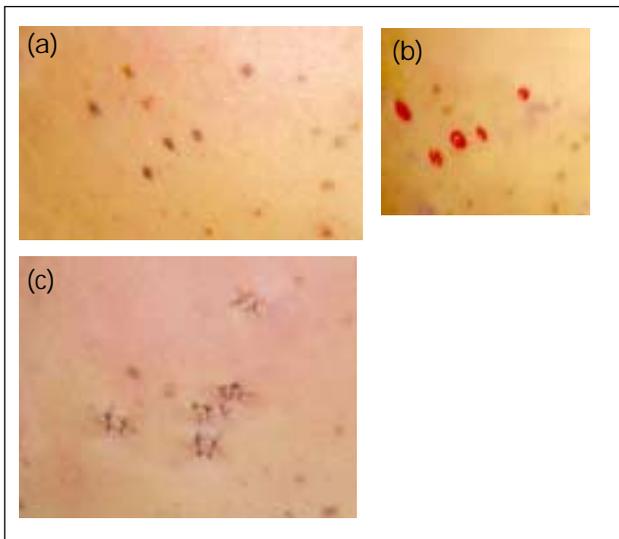


Figure 1. (a) Multiple melanocytic naevi and ephelids of the lower face. (b) Surgical excision with No. 11 blade with defects oriented along relaxed skin tension lines (RSTL). (c) Single layer closure with fine sutures along RSTL.

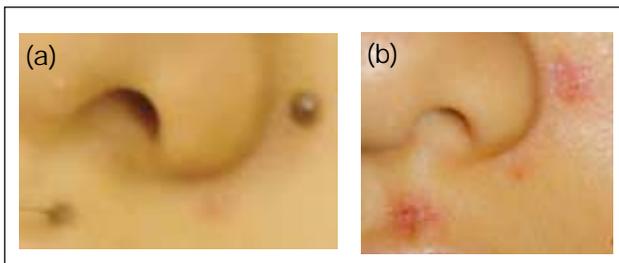


Figure 2. Surgical excision of melanocytic naevi: (a) before and (b) at 1 week when sutures were removed.

naevus without dense pigmentation may also be suitable for laser surgery. Usually, melanocytic naevi are treated by pigment specific laser system (Variable pulse VP 532 nm laser, QS Alexandrite 755 nm laser, QS Nd:YAG 1064 nm laser) and ablative laser system (CO₂ or Erbium laser).

Commonly, the Versapulse laser system and the Ultrapulse carbon dioxide laser (Lumenis Company) or the Derma K (Erbium/Carbon dioxide laser system from Honeyclave Company) are used to treat melanocytic naevi after applying EMLA cream for 1 hour or more.

The long pulse VP 532 nm laser with a spot size of 2 mm, pulse width of 2 ms and energy of 12 J/cm² is selected. The laser is applied in 2 to 3 passes without skin cooling, with the goal of eliminating superficially located melanocytes. The burnt pigmented tissue is rubbed off with a cotton tip between passes. For thick or nodular melanocytic naevi with deep dermal pigment, additional treatment with multiple passes of Erbium/CO₂ laser is often necessary. The Derma K parameter is 3 mm spot size, Erbium 0.7 J (10 J/cm²), 20%-30% CO₂, 2-3 watts or 0.2 mm spot size, Erbium 0.2 J, 20% CO₂, 2 watts. For small sized moles, the 0.2 mm spot size hand piece in defocused mode is used. Alternatively, the 3 mm spot size hand piece is used in conjunction with a special metal template so that only a portion of the laser beam is applied to the small mole. The Erbium/CO₂ laser is applied in multiple passes until all visible pigments are vaporized. A final pass with QS Alexandrite laser 755 nm, 3 mm spot, 5.0-5.5 J/cm² is often applied as well. For nodular naevi, the raised portion of the mole can first be 'shaved or pared down' with the Erbium/CO₂ laser. Pigment specific laser can then be applied to the flattened mole to remove the residual pigment at the base of the mole. Multiple treatment sessions at 4-6 weeks apart may be required. A depressed scar may form when large deep moles are treated. Topical antibiotic is applied after laser surgery.

Treatment by intense pulsed light therapy

Similarly, thick or nodular melanocytic naevi is usually difficult to eradicate with intense pulsed light therapy. Adjacent normal skin is covered with paper which has a hole allowing the mole to be 'seen' and treated. Cold gel is applied generously. Typical IPL parameter is 570 nm filter, 30-35 J/cm², T1 2.4 msec, T2 4.0 msec, D1 20 msec. A more aggressive IPL treatment for raised mole would be: 615 nm filter, 40 J/cm², 2.4 msec triple pulses, D1 1 msec, D2 30 msec. In all IPL treatments, a

spacer is attached to the filter of the hand piece in order to allow 1-2 mm gel space between the filter and the skin.

Conclusions

Despite the use of multiple laser systems or intense pulsed light to treat melanocytic naevi, persistence or recurrence is common and sometimes the recurrent naevi after laser surgery may grow larger in size. Additional laser treatments are often required for thick and deep-rooted naevi. Should the naevi persist after 3 laser treatments, the author will usually recommend excisional surgery to the patient for cost effectiveness. It is prudent for the doctor to discuss the procedures, the alternatives, the complications and the cost implications with the patient before initiating treatment for melanocytic naevi. Despite the patients' concern for scars, the overwhelming majority of the patients are satisfied with the results of surgical excision for facial naevi.

Further Reading

1. Watt AJ, Kotsis SV, Chung KC. Risk of melanoma arising in large congenital melanocytic nevi: a systematic review. *Plast Reconstr Surg* 2004;113:1968-74.
2. Dummer R. About moles, melanomas, and lasers: the dermatologist's schizophrenic attitude toward pigmented lesions. *Arch Dermatol* 2003;139:1405-6.
3. Moreno-Arias GA, Ferrando J. Noncoherent-intense-pulsed light for the treatment of relapsing hairy intradermal melanocytic nevus after shave excision. *Lasers Surg Med* 2001;29:142-4.
4. Bong JL, Perkins W. Shave excision of benign facial melanocytic naevi: a patient's satisfaction survey. *Dermatol Surg* 2003;29:227-9.

References

1. Tsao H, Bevona C, Goggins W, Quinn T. The transformation rate of moles (melanocytic nevi) into cutaneous melanoma: a population-based estimate. *Arch Dermatol* 2003;139:282-8.