Common blue naevi usually occur on the skin however subungual blue naevi are extremely rare pigmented lesions of the nail. They need to be differentiated from pigmentations, chromogenic nail diseases, infections and most importantly melanoma. Herein, a 39-year-old female patient with subungual blue naevus who presented together with elkonyxis is presented with a brief review of cases from the literature.

Keywords: Blue naevi, elkonyxis, melanoma, nail, subungual

Case report

A 39-year-old Caucasian female patient admitted to the dermatology outpatient clinic with a complaint of discoloration and deformity on the nail of her left second finger. The blue-purple discoloration had been present for approximately
15 years but she had noted mild progression of its borders lately. The nail plate distal to the discolouration had become brittle over the past 3-4 years with severe splitting and peeling of the nail. There was no previous history of nail trauma and the lesion was slightly tender only if traumatised or on palpation. There was no personal or family history of skin cancer or nail disease.

Dermatological examination of the second left fingernail showed non-blanching steel blue pigmentation surrounded by a rim of light brown area and an outer sheath of bony white circular lunula. A triangular pinched-out appearance of the nail plate beginning from the base of the lesional distal matrix area was present. Multiple longitudinal depressions were present in the median part of the nail which were consistent with elkonyxis (Figure 1). Under dermatoscopic examination, the discolouration was seen to extend under the proximal nailfold (Figure 2). 18-MHz ultrasound imaging of the nail plate and nailfold showed increased longitudinal curvature of nail plate with irregularities within dorsal and ventral plates, slight thickening of nailbed with increased hypoechogenicity and vascularity compared to the right second finger nail. No solid mass was detected (Figure 3). Pigmentation of surrounding skin was not present. Although the lesion had been present for 15-year, the recent changes observed by the patient together with the extension of the lesion under the proximal nailfold and recent onset of elkonyxis associated with the pigmented lesion led to an excisional biopsy. The differential diagnoses included cellular blue naevus, melanoma arising form a blue naevus and glomus tumour. Histopathological examination of the lesion showed spindle cell proliferation with single dendritic bipolar...
Subungual blue naevus presenting with elkonyxis

Figure 3. Irregularities within dorsal and ventral plates of the nail plate, thickening of nailbed with increased hypoechochogenicity and vascularity. pnf: proximal nailfold, nb: nailbed, m: matrix, dph: distal interphalangeal joint.

Figure 4. The lesion in the subepithelial area is characterised by spindle cell proliferation with brown pigment in between (H&E x100).

Discussion

Blue naevi are caused by dermal proliferation of pigmented melanocytes, these lesions particularly look blue clinically and are predominantly observed blue under dermatoscopy because of the Tyndall phenomenon observed in the skin where deep located melanin gives a bluish hue. Blue naevi can be observed as flat macules or papules and typically show a structureless steel-blue colouration without reticular network dermatscopically. Common blue naevi usually occur on the skin, subungual blue naevus is rarely seen. Subungual blue naevus was first described as a component of periungual combined naevus in a patient with Klippel-Trenaunay syndrome who also had regional lymphatic involvement of blue naevus. In the literature, reported cases of blue naevi are also few. Causeret et al reported a 42-year-old female patient with a blue spot on melanocytes in the collagenous stroma without hypercellularity, atypia or mitoses (Figures 4 & 5). The patient was therefore diagnosed with cellular subungual blue naevus and elkonyxis.
her left first toenail. This patient had a phototype V skin and an ovoid shaped blue pigmentation along with several longitudinal melanonychia. A 20-MHz ultrasound examination revealed a homogeneous hypoechogetic subungual band and the excised lesion was reported as cellular subungual blue naevus. In 2008, Naylor et al described a further case of subungual blue naevus involving finger nail with a combined histopathological phenotype where the lesion is composed of a mixture of variably shaped small round, spindled, and epithelioid melanocytes. This case was the first to show combined histopathological features of blue naevi as the authors also reviewed reported subungual melanocytic naevi in the literature and concluded that four of the previous cases were of the common type, the remaining three cases were reported as the cellular type. These blue naevi were equally seen in both genders and involved both finger and toenails.

Our case was not congenital but acquired blue naevus and was a common blue naevus histopathologically. Associated nail plate abnormalities with subungual blue naevus such as fragility was only reported by Naylor et al where the patient complained about brittleness of the nail. Our case presented with a severe involvement of the nail plate presenting with elkonyxis. In fact it was the main presenting complaint. She also had noticed recent enlargement of the lesion. Expansile growth in subungual blue naevus has been previously reported by Lee et al in which there were non-symmetrical black macules on the nail bed with increasing size corresponding to increased vertical thickness of benign melanocytes histopathologically.

It is crucial to exclude subungual melanoma when dealing with subungual pigmented lesions. Features like Hutchinson’s sign, progression of the

Figure 5. (A) There is a Grenz zone between the epithelium and the lesion. Cells are dispersed in the collagenous stroma (H&E x200); (B) Single dendritic bipolar spindle shaped melanocytes in the collagenous stroma. Hypercellularity, atypia or mitoses are not seen. The brown pigment is melanin mostly phagocytosed by melanophages (H&E x400).
size of the lesion, darkening of the pigmentation and single nail involvement must be carefully evaluated. Besides the history of lesional enlargement and nail dystrophy our case was diagnosed as subungual cellular blue naevus. It is important to be aware of the clinical and imaging features of these rare cases to increase our awareness of both benign and malignant pigmentations of the nail apparatus and better understanding and differentiation of these diseases.

References