Complex mixed vascular malformation with overgrowth: PROS spectrum

Complex mixed vascular malformations with overgrowth are rare disorders characterised by combined vascular anomalies (capillary, venous, lymphatic and/or arteriovenous) and disproportionate growth of soft tissue or bone. Main entities include PIK3CA-related overgrowth spectrum (PROS) and Proteus syndrome, linked to AKT1 mutations.[1]

We report a preterm newborn (34 weeks, 2700 g) presenting with a large (24×15 cm) soft subcutaneous lesion, extending from the axilla to the left pelvis, slightly crossing the midline, with a violaceous capillary malformation (figure 1). MRI showed a mixed lymphatic malformation with macro and microcystic components without other anomalies. Genetic testing of affected tissue identified pathogenic PIK3CA variant, confirming PROS.

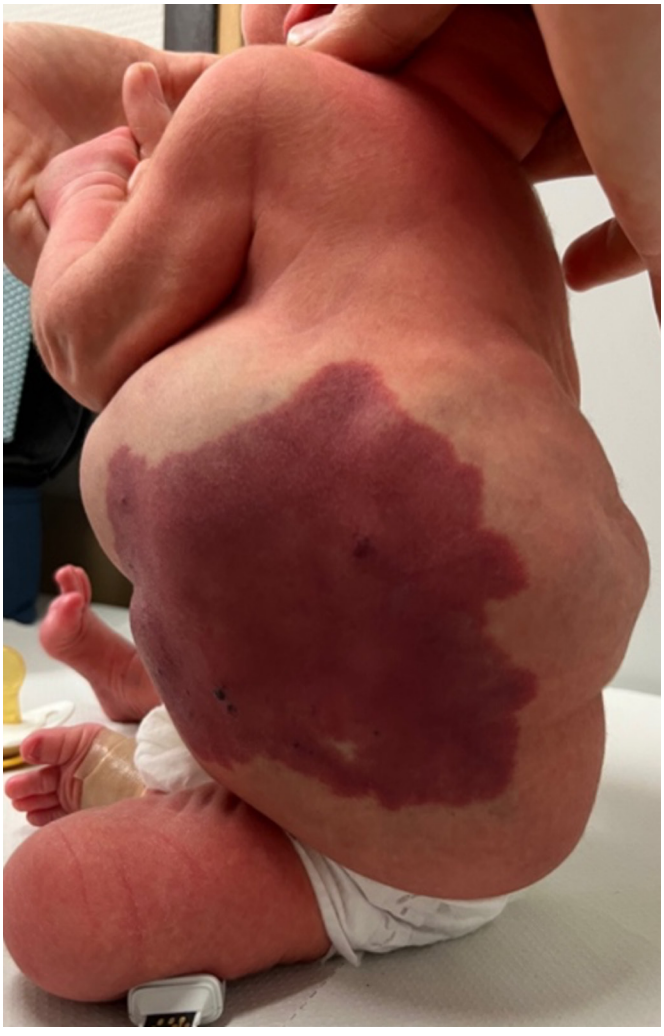

Figure 1 Extensive soft, purplish lesion measuring 24×15 cm, spanning from the axilla to the left pelvis and slightly crossing the midline.

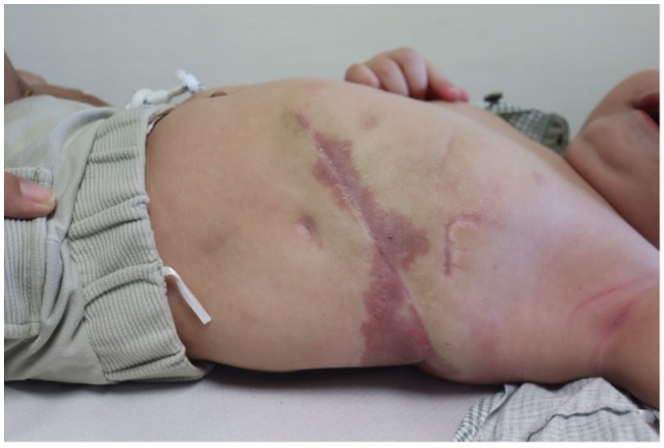

Figure 2 At 2 months, near-total surgical excision was performed with favourable evolution. Hb, Haemoglobin; CLOVES, Congenital Lipomatous Overgrowth, Vascular malformations, Epidermal nevi and Skeletal/spinal anomalies syndrome.

Initial management consisted of observation and multidisciplinary follow-up. However, at 21 days, rapid enlargement with intralesional bleeding led to severe anaemia (Hb 6 g/dL) requiring transfusion and initiation of sirolimus. At 2 months, near-total surgical excision was performed (figure 2), with favourable outcome and continued outpatient follow-up.

The PROS spectrum includes disorders such as CLOVES and Klippel-Trénaunay syndromes.[1 2] Diagnosis is primarily clinical and confirmed by detecting somatic PIK3CA mutations, reflecting mosaicism.[3]

Potential complications include thrombosis, embolism, pain, bleeding, deformities, functional impairment and heart failure.

Management must be individualised and multidisciplinary, combining supportive care, surgery, sclerotherapy and targeted therapies such as sirolimus or PI3K inhibitors.[4]

Early diagnosis is essential to prevent complications and guide treatment. Imaging is crucial for assessing lesion extent and planning interventions. Long-term follow-up is required due to risks progression or recurrence, particularly during growth, along with family counselling and psychosocial support.

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REFERENCES

1 Martinez-Lopez A, Salvador-Rodriguez L, Montero-Vilchez T, *et al*. Vascular malformations syndromes: an update. *Curr Opin Pediatr* 2019;31:747–53.
2 Chen H, Gao W, Liu H, *et al*. Updates on Diagnosis and Treatment of PIK3CA-Related Overgrowth Spectrum. *Ann Plast Surg* 2023;90:S209–15.
3 Erwin AL, El Haija AA, Bennett JT, *et al*. Isolated lateralized overgrowth and the need for tumor screening: A clinical practice resource of the American College of Medical Genetics and Genomics (ACMG). *Genet Med* 2025;27:101480.
4 Lu JT, Aghajani M, Sebaratnam DF. Targeted management of vascular anomalies. *J Eur Acad Dermatol Venereol* 2026;40:773–81.