

Soft-tissue congenital hemangiomas and complications

A retrospective cohort with emphasis on prenatal diagnosis, counselling and postnatal management

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Objective
To characterize the prenatal imaging phenotype of soft-tissue congenital hemangiomas (CH) and evaluate outcome

Methods
Retrospective cohort of **14 fetuses** with prenatally detected soft-tissue masses subsequently confirmed as CH

Results
Location of lesions

- Head and neck: 7/14 (50%)
- Extremities: 5/14 (36%)
- Trunk: 2/14 (14%)

Prenatal ultrasound

- **Well-circumscribed** hypoechoic soft-tissue mass (86%)
- Doppler: marked **hypervascularity** (100%)
- Intralesional **vascular ectasias** (100%)
- Large draining vein (50%)
- Echogenic foci / calcifications (36%)
- Right atrial enlargement (36%)

Fetal MRI

- **Well-circumscribed** lesion (82%)
- **Iso- to hyperintense T2** signal (64%), internal T2-hypointensities
- **No cystic** component
- **No muscle invasion**

→Important to differentiate from *CH from fibrosarcoma, teratoma, Kaposiform hemangioendothelioma and myofibroma*

Postnatal evolution
Complete or partial **involution** within the first year: 13/13 (100%)

Complications

- **Cardiac : prenatal** right atrial enlargement: 5/14 (36%)
- Symptomatic **neonatal heart failure**: 1/13 (8%)
- **Ulceration**: 3/13 (23%), complicated by hemorrhage in 1 case

Conclusion
CH should be suspected when facing a fetal soft-tissue well circumscribed mass, markedly hypervascular, often associated with vascular ectasias. MRI typically shows a non-invasive lesion without muscle infiltration. After birth most lesions involute spontaneously. Delivery and neonatal management should occur in tertiary centers because of risk of ulceration complicated by hemorrhage. Transient post-natal cardiac failure may occur.

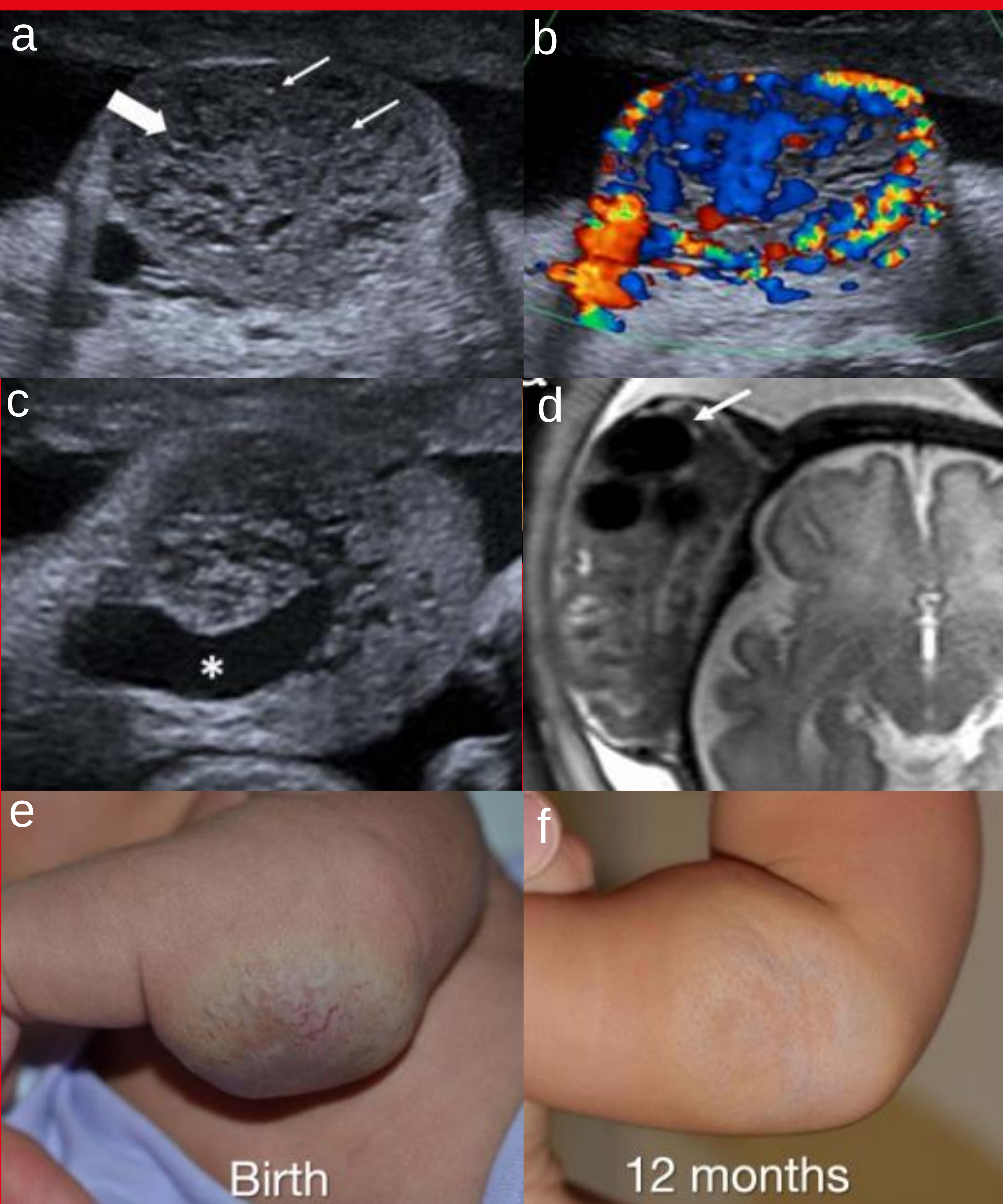


Figure 1. Transabdominal fetal ultrasound showing CH in different patients, on flank (a,b), elbow (c), on the skull : well circumscribed masses, ranging from mildly to highly hypoechogenic, with intense hypervascularization (b), vascular ectasias (thick arrow), large draining veins (*), internal echogenic foci (thin arrows), T2-weighted MRI (d): globally iso- to mildly hyperintense compared to cerebral cortex and hyperintense to surrounding tissue: e with areas of internal T2 hypointensity (arrow). (e,f) Spontaneous complete postnatal involution of CH at 12 months