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# Giant Congenital Melanocytic Nevus with Large Pedunculated Low-Flow Vascular Malformation of the Trunk in a Newborn: A Clinico-Radiological and Surgical Management Case Report

***Article History:***

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***Abstract:*** ***Background***: Giant congenital melanocytic nevi (GCMN) are rare pigmented lesions often present at birth and may be associated with satellite nevi and various structural abnormalities. Their coexistence with a large pedunculated soft-tissue mass is unusual and poses diagnostic as well as surgical challenges. ***Case Presentation:*** 2 female infants were evaluated. The first was a term neonate presenting at 1 month of age with a bathing-trunk type GCMN involving the lower trunk and limbs, associated with a rapidly enlarging pedunculated mass over the right lower back. The second was a 1-month-old female infant with a similar extensive congenital melanocytic nevus and a progressively enlarging soft-tissue mass over the right posterolateral chest wall. Antenatal anomaly scans were normal in both cases. Postnatal ultrasound, MRI, and contrast-enhanced CT demonstrated well-defined, lobulated, heterogeneously enhancing subcutaneous soft-tissue masses with internal non-enhancing hypodense areas, consistent with low-flow vascular malformations, without spinal, intrathoracic, or intra-abdominal extension. Surgical excision was performed in the first case, confirming a low-flow vascular lesion.

***Keywords:*** Giant congenital melanocytic nevus, bathing-trunk nevus, vascular malformation, low-flow lesion, newborn surgery, MRI, neonatal soft-tissue mass.

## INTRODUCTION

Congenital melanocytic nevi (CMN) are pigmented cutaneous lesions present at birth, resulting from the proliferation of neural-crest–derived melanocytes within the skin. Their clinical appearance ranges from small, well-circumscribed macules to large, geographically extensive plaques(1). The size-based

classification is clinically significant, with *giant* congenital melanocytic nevi (GCMN) typically defined as lesions measuring more than 20 cm in projected adult size or covering more than 2% of the body surface area in newborns representing the most severe end of the spectrum. GCMN carries both cosmetic and psychosocial consequences for families, as well as important medical considerations, including risk of melanoma, neurocutaneous melanosis, and associated structural anomalies(2).

The bathing-trunk or garment-type distribution of GCMN, which involves the lower trunk, gluteal region, and lower limbs, is one of the more dramatic presentations. These lesions often coexist with multiple satellite nevi and may be associated with leptomeningeal melanocytosis(3). Nevertheless, the majority of affected neonates remain neurologically asymptomatic at birth. While the dermatological manifestations of GCMN are well known, the coexistence of additional congenital soft-tissue masses or vascular malformations is uncommon and less frequently reported in literature(4).

Vascular anomalies in neonates encompass a wide heterogeneity of lesions, ranging from high-flow arteriovenous malformations to benign low-flow venous or lymphatic malformations. Their clinical presentation varies widely depending on anatomical site, flow characteristics, and depth of involvement(5). Low-flow vascular malformations tend to be soft, compressible, and slow-growing, whereas solid, firm, progressively enlarging pedunculated masses at birth are unusual and may mimic lipomas, neurofibromas, hamartomas, teratomas, or fibrous tumors. When such masses coexist with GCMN, the diagnostic complexity increases, particularly in distinguishing between melanocytic proliferation and unrelated soft-tissue tumors(6).

Antenatal ultrasonography has significantly improved prenatal detection of structural fetal anomalies. However, small or superficially located cutaneous lesions particularly vascular malformations confined to the subcutaneous plane may remain undetected due to fetal position, limited contrast resolution, and technical constraints(7). Thus, even in pregnancies with normal mid-trimester anomaly scans, neonates may present with unexpected external masses at birth. Early postnatal imaging, including ultrasound with Doppler and MRI, plays a crucial role in delineating lesion extent, flow characteristics, tissue components, and relationship with underlying structures(8).

The simultaneous occurrence of a giant bathing-trunk nevus with a large pedunculated low-flow vascular mass is extremely rare and sparsely documented. Such presentations pose diagnostic, therapeutic, and psychosocial challenges for clinicians and caregivers. Surgical intervention becomes necessary when complications such as rapid enlargement, tension on overlying skin, ulceration, or cosmetic concerns arise(9). This case highlights the importance of meticulous clinical evaluation, detailed imaging, and coordinated multidisciplinary management in neonates presenting with complex congenital cutaneous and soft-tissue lesions.

## CASE PRESENTATION

**Case 1:** A female neonate, the first child of a 20-year-old healthy non-consanguineous mother, was brought to the paediatric unit at one month of age for evaluation of a progressively enlarging swelling over the right lower back. The parents reported no family history of congenital skin disorders, vascular anomalies, or structural malformations. The baby was born at term with a birth weight of 3.1 kg after an uneventful pregnancy.

**Antenatal and Perinatal History:** The mother received routine antenatal care throughout pregnancy. Detailed anomaly scans were performed at 18, 30, and 35 weeks of gestation. All three scans reported a single live intrauterine fetus with normal spine, abdominal wall, cardiac chambers, limbs, and organ development, and no congenital anomalies were noted. The placenta was fundal and liquor volume remained adequate throughout gestation. No maternal illnesses, infections, radiation exposure, teratogenic drug intake, or gestational diabetes were documented.

The baby was delivered by lower-segment caesarean section for non-reassuring fetal status. Apgar scores were normal, and the neonate required NICU observation for six days due to the presence of a visible swelling over the back at birth. No respiratory distress, feeding difficulty, fever, seizures, or signs of sepsis were observed during NICU stay.

**Clinical Findings at Birth:** On initial examination, the neonate exhibited a striking giant congenital melanocytic nevus (GCMN) distributed in a classic bathing-trunk pattern involving the lower back, gluteal region, and both lower limbs. Numerous satellite nevi were scattered over the trunk, scalp, and extremities. The nevus displayed coarse,

hyperpigmented skin without ulceration, bleeding, or signs of infection. In addition to the nevus, a firm, pedunculated mass was noted over the right lower lateral abdominal wall and back.

 

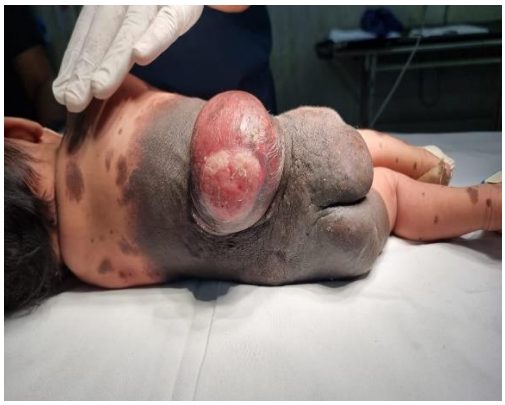

**Fig 1: Clinical photograph of the neonate showing a giant congenital melanocytic nevus in a bathing-trunk distribution involving the lower back, gluteal region, and both lower limbs, along with a large pedunculated, tense, erythematous soft-tissue mass arising from the right lower back.**

The swelling, initially lemon-sized at birth, gradually increased to the size of a small orange over the first month of life (Fig 1). The overlying skin became tense and shiny with mild erythema, but there was no discharge, warmth, or tenderness. Neurological, abdominal, respiratory, and cardiovascular examinations were normal.

**Histopathological Examination:** Gross examination revealed two skin-covered soft-tissue specimens. The larger specimen measured approximately 8 × 4.5 × 2.5 cm, with overlying skin measuring 6 × 3 cm. Cut section showed a well-circumscribed dermal lesion measuring 6.5 × 4 × 2 cm with focal cystic spaces, one of which contained hemorrhagic fluid. Additional smaller skin-covered soft-tissue fragments were also received, the largest measuring 3.5 × 1 × 0.6 cm. Microscopic examination of sections from both specimens showed epidermis and dermis with nests of nevus cells extending around dermal appendages and infiltrating deeper into the dermis. The deeper dermis demonstrated numerous malformed blood vessels admixed with fibrous tissue, adipose tissue, neural elements, and focal chondroid differentiation, consistent with a hamartomatous architecture. No evidence of necrosis, cellular atypia, or increased mitotic activity was identified. Overall histomorphological features were suggestive of a congenital melanocytic nevus with associated hamartomatous components, correlating with a low-flow vascular malformation.

**Diagnostic Assessment:** A postnatal ultrasound performed on day two of life demonstrated a 5 × 3 × 2 cm soft-tissue lesion restricted to the skin and subcutaneous plane, showing low-velocity monophasic flow on Doppler with no intra-abdominal extension (Fig 2).

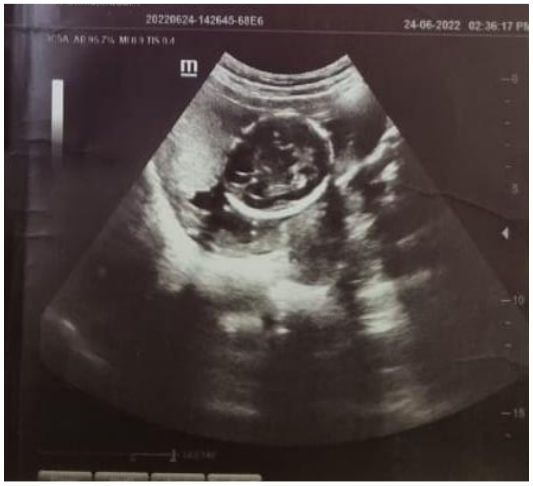


**Fig 2: Postnatal ultrasound showing a 5 × 3 × 2 cm subcutaneous soft-tissue lesion with low-velocity monophasic flow and no intra-abdominal extension.**

The liver, kidneys, spleen, pancreas, gallbladder, and urinary bladder were normal. No ascites or lymphadenopathy was present. MRI of the abdomen and back further delineated a large, homogeneous, pedunculated soft-tissue mass arising from the right posterior-lateral abdominal wall. The lesion exhibited intermediate T1/T2 signal intensity,

 

lacked cystic components, and showed no connection with the vertebral canal, spinal cord, or intra-abdominal cavity (Fig 3). There was no evidence of spinal dysraphism, neural tube defect, teratoma, or solid-organ involvement.

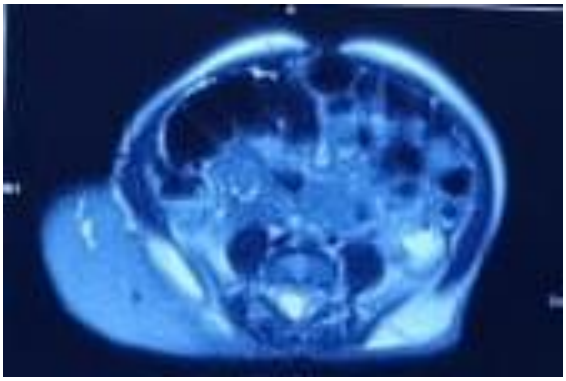

**Fig 3: Axial MRI image showing a pedunculated soft-tissue mass arising from the right posterior-lateral abdominal wall with no intra-abdominal extension.**

**Indication for Surgical Management:** The rapid enlargement of the mass, progressive stretching of the overlying skin, and the risk of ulceration or secondary infection led to the decision for early surgical excision. Parental anxiety and the favourable superficial location of the lesion further supported timely intervention.

**Operative Findings and Procedure:** Under general anaesthesia, a well-circumscribed, firm, pedunculated mass confined to the subcutaneous plane was identified. The mass contained a few small feeding vessels consistent with a low-flow vascular malformation. The pedicle was ligated and the mass was excised completely with preservation of the surrounding healthy tissue (Fig 4). Primary wound closure was achieved without difficulty. Intraoperative appearance revealed a large, solid, homogeneous tumor without invasion into muscle or deeper structures (Fig 5).

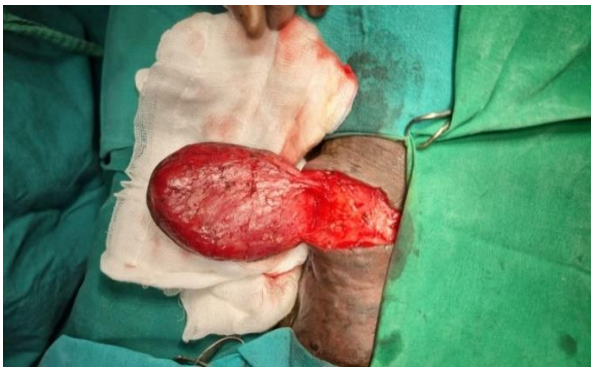

**Fig 4: Intraoperative image demonstrating complete excision of the pedunculated subcutaneous soft-tissue mass arising from the right lower back.**

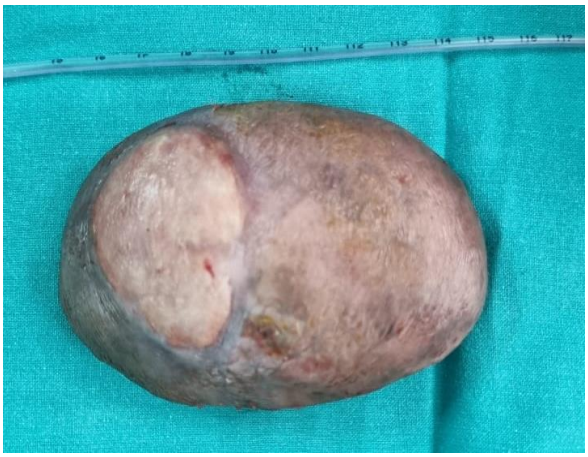

**Fig 5: Excised specimen showing a well-circumscribed pedunculated soft-tissue mass with an intact external surface.**

**Postoperative Course and Follow-Up:** The neonate recovered well, maintaining stable vitals and normal feeding (Fig 6). The surgical wound

healed satisfactorily with no evidence of infection or recurrence during early follow-up. Dermatology counsel was provided regarding long-term monitoring of the giant congenital nevus due to its lifelong melanoma risk. The baby remained neurologically normal and developmentally appropriate for age.

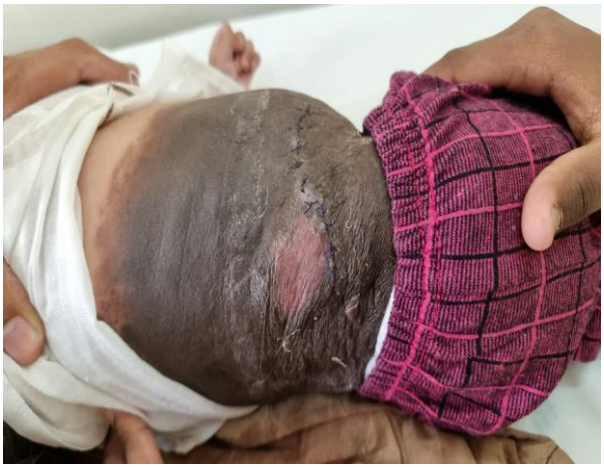

**Fig 6: Postoperative image showing a well-healed surgical site with primary closure following excision of the pedunculated mass.**

**Case 2:** A female infant aged 1 month was brought to the paediatric unit for evaluation of a progressively enlarging swelling over the right posterolateral chest wall since birth. The child was born to a healthy mother following an uneventful pregnancy. The parents reported no family history of congenital skin disorders, vascular anomalies, or structural malformations.

**Antenatal and Perinatal History:** The mother received regular antenatal care. Detailed anomaly scans were performed during the second and third trimesters of pregnancy and did not reveal any fetal anomalies. No maternal illness, infection, radiation exposure, or teratogenic drug intake was reported during pregnancy. The infant was delivered at term. The immediate postnatal period was uneventful, and there were no episodes of respiratory distress, feeding difficulty, fever, seizures, or signs of sepsis.

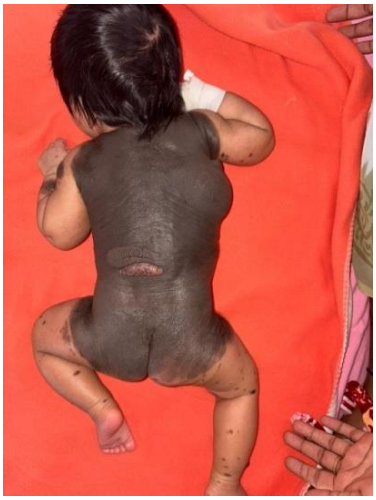

**Fig 7: Clinical presentation of Case 2**

 

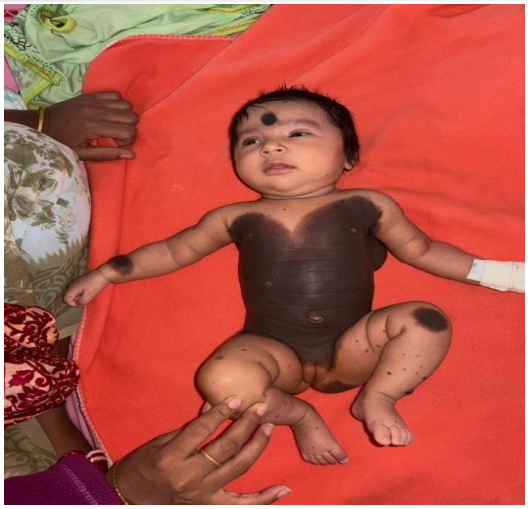

**Fig 7: Clinical presentation of Case 2**

**Clinical Findings at Presentation:** On physical examination, the infant exhibited an extensive congenital melanocytic nevus involving the lower trunk in a bathing-trunk distribution, with multiple satellite nevi scattered over the surrounding skin. In addition to the pigmented lesion, a firm, lobulated, non-tender soft-tissue mass was noted over the right posterolateral chest wall. The overlying skin was intact, without ulceration, discharge, or local warmth. The swelling showed progressive increase in size since birth. The infant was hemodynamically stable, and systemic examination, including neurological, cardiovascular, respiratory, and abdominal assessment, was within normal limits.

**Diagnostic Assessment:** A contrast-enhanced computed tomography (CT) scan of the abdomen and pelvis was performed for further evaluation. Imaging revealed a well-defined, lobulated, heterogeneously enhancing isodense soft-

tissue density mass lesion involving the subcutaneous plane of the right posterolateral chest wall. The lesion contained multiple internal non-enhancing hypodense areas and measured approximately 4.4 cm (anteroposterior) × 5.5 cm (mediolateral) × 6.7 cm (craniocaudal).

Anteriorly, the lesion extended up to the serratus anterior muscle; medially, it reached the paraspinal muscles on the right side; and superiorly, it extended up to the infraspinatus muscle. The lesion maintained well-defined fat planes and showed no evidence of invasion into deeper musculature. There was no intrathoracic, intra-abdominal, or spinal extension.

The liver, spleen, pancreas, kidneys, bowel loops, urinary bladder, uterus, and major abdominal vessels were normal in appearance. No lymphadenopathy, ascites, or pleural effusion was noted.

**Radiological Impression and Management Plan:** Based on the imaging characteristics, a low-flow vascular lesion was considered, with differential diagnoses including infantile hemangioma, lymphangioma, or other vascular malformations. Clinical and radiological correlation was advised. The patient was planned for multidisciplinary evaluation involving paediatric surgery, dermatology, and radiology for further management and follow-up.

## DISCUSSION

Giant congenital melanocytic nevi (GCMN) represent a rare and striking form of melanocytic proliferation, occurring in approximately 1 in 20,000 live births. Their pathogenesis is linked to somatic mutations in NRAS or BRAF affecting neural-crest–derived melanocytes (4). The bathing-trunk distribution, as seen in these cases, is among the most dramatic presentations and is frequently associated with multiple satellite nevi. While the dermatological aspects of GCMN are well documented, its coexistence with additional congenital soft-tissue masses, particularly large pedunculated or infiltrative vascular malformations, is extremely uncommon and poses diagnostic and therapeutic challenges (10).

The coexistence of GCMN and large exophytic soft-tissue masses in both infants prompted a broad differential diagnosis that included low-flow vascular malformations, lipoblastoma, fibrolipomatous tumours, pedunculated neurofibroma, teratoma, and hamartomatous lesions associated with melanocytic nevi. In both cases, the firm consistency and progressive postnatal enlargement raised concern for

 

a proliferative vascular lesion or congenital tumour (11). Ultrasound with Doppler was instrumental in

narrowing the diagnosis by demonstrating solid subcutaneous lesions with monophasic low-flow vascularity and absence of cystic components or intra-abdominal extension. MRI and contrast-enhanced CT further established the safety of conservative or surgical management by excluding spinal dysraphism, neural tube defects, intrathoracic, or intra-abdominal communication. These imaging modalities are essential in the evaluation of neonatal soft-tissue masses, as they assist not only in diagnosis but also in operative planning by delineating anatomical planes, lesion extent, and vascular characteristics (12).

In both infants, antenatal scans performed during the second and third trimesters failed to detect the lesions, a finding not unusual for masses confined to the superficial subcutaneous plane. Subtle cutaneous or low-flow vascular anomalies may escape prenatal detection due to fetal position, amniotic fluid interference, and technical limitations of ultrasonography. This reinforces the principle that a normal antenatal anomaly scan does not exclude superficial congenital masses, emphasising the need for meticulous postnatal examination of newborns, particularly in the presence of extensive cutaneous lesions such as GCMN (7).

The decision for early surgical excision in the first case was guided by rapid increase in lesion size, progressive tension and erythema of the overlying skin, and the potential risks of ulceration, infection, or haemorrhage. In neonates, pedunculated masses are especially vulnerable to trauma and secondary complications. In the second case, although surgical intervention was deferred, detailed imaging demonstrated preserved fat planes and absence of deeper extension, allowing for careful clinical and radiological surveillance. In both cases, the cosmetic and psychosocial implications for the families were considerable, particularly given the coexistence of extensive GCMN.

In the surgically managed infant, intraoperative findings were consistent with a well-circumscribed low-flow vascular malformation confined to the subcutaneous plane. Vascular malformations are congenital anomalies of the vasculature that do not regress spontaneously and often require intervention based on symptoms or complications. The ease of excision and minimal intraoperative bleeding corroborated the low-flow nature suggested by Doppler imaging. Primary closure yielded an acceptable cosmetic outcome and reduced the risk of postoperative infection (13). The imaging characteristics in the second case were also strongly suggestive of a similar low-flow vascular lesion.

Long-term management in both infants must also consider the implications of GCMN. These lesions carry a 2–5% lifetime risk of melanoma, most commonly arising during early childhood. In addition, large bathing-trunk nevi warrant surveillance for neurocutaneous melanosis (NCM), although the absence of neurological symptoms and normal neuroimaging findings in both cases are reassuring (14). Regular dermatological follow-up, parental education regarding warning signs such as rapid thickening, nodularity, ulceration, or colour change, and consideration of staged excisions or cosmetic interventions remain essential components of holistic care (15).

Thes case highlights the importance of a multidisciplinary approach involving neonatology, dermatology, radiology, and paediatric surgery. The association of giant congenital melanocytic nevi with large low-flow vascular malformations is rare, and early diagnosis with coordinated management significantly improves outcomes, both medically and cosmetically.

## CONCLUSION

This case reports a rare and complex presentation of a neonate with a giant congenital melanocytic nevus in bathing-trunk distribution coexisting with a large pedunculated low-flow vascular malformation. Despite normal antenatal scans, the postnatal emergence and progressive enlargement of the mass required timely diagnostic evaluation and multidisciplinary care. Imaging with Doppler ultrasound and MRI played a pivotal role by confirming the superficial nature of the lesion and excluding deeper structural involvement, thereby enabling safe surgical excision. Early surgery prevented potential complications such as ulceration, infection, or haemorrhage and resulted in an excellent short-term outcome. Given the lifelong risk of melanoma and the psychosocial impact associated with GCMN, long-term dermatological and neurological follow-up is essential. This case underscores the need for vigilance in examining newborns, even after normal antenatal imaging, and highlights the importance of coordinated management in rare congenital presentations.

## BIBLIOGRAPHY

1. El-Rayes D, Wilson K, Maguiness S, Miller D, Cazzato G, Giubellino A. Congenital Melanocytic Nevus with Neurocristic Cutaneous Hamartoma: A Case Report. Dermatopathology. 2025 Apr 10;12(2):12.
2. Viana ACL, Gontijo B, Bittencourt FV. Giant congenital melanocytic nevus. An Bras Dermatol. 2013 Nov;88(6):863.
3. Mohandoss V, Williams V, Ravikumar N, Nallasamy K. Congenital Bathing Trunk Nevus

 

with Meningomyelocele. Indian Dermatol Online J. 2019 Mar 1;10(2):186.
4. Meshram GG, Kaur N, Hura KS. Giant Congenital Melanocytic Nevi: An Update and Emerging Therapies. Case Rep Dermatol. 2018;10(1):24.
5. Gibson CR, Barnacle AM. Vascular anomalies: special considerations in children. CVIR Endovasc. 2020 Dec 1;3(1):60.
6. Tanugroho RR, Wee LWY, Koh MJA, Chong JH. Approach to clinically significant vascular anomalies in children. Singapore Med J. 2021 Dec 1;64(12):714.
7. Venkatachalam I, Siddique M. Antenatal ultrasound cannot detect all congenital anomalies: clinical limitations, India-specific barriers, and medicolegal perspectives. J Hand Microsurg. 2025 Sep 1;17(5).
8. Leiroz R, Aquino M de A, Santos KP, Monteiro MDC, Aires TS de F, Araujo Júnior E, et al. Accuracy of the mid-trimester ultrasound scan in the detection of fetal congenital anomalies in a reference center in Northeastern Brazil. J GynecolObstet Hum Reprod. 2021 Dec 1;50(10).
9. Santa Cruz DJ, Bashiti H. Bathing trunk nevus with extensive vascular involvement. J Cutan Pathol. 1979;6(6):513–6.
10. Han JS, Won CH, Chang SE, Lee MW, Choi JH, Moon KC. Giant congenital melanocytic nevus with proliferative nodules mimicking a congenital malignant melanoma. Ann Dermatol. 2014;26(4):554–6.
11. Kumar R, Garg C, Saikia UN, Rao KLN. Concurrent congenital fibrolipomatous hamartoma and congenital nevus of infancy: a syndromic or chance association. J Indian Assoc Pediatr Surg. 2018 Oct 1;23(4):219.
12. Griffith JF. Practical approach to ultrasound of soft tissue tumors and the added value of MRI: how I do it. J Ultrason. 2023 Oct 1;23(95):e299.
13. Cox JA, Bartlett E, Lee EI. Vascular malformations: a review. Semin Plast Surg. 2014;28(2):58.
14. Belysheva TS, Vishnevskaya YV, Nasedkina TV, Emelyanova MA, Abramov IS, Orlova KV, et al. Melanoma arising in a giant congenital melanocytic nevus: two case reports. DiagnPathol. 2019 Feb 19;14(1):21.
15. Jalalabadi F, Trost JG, Cox JA, Lee EI, Pourciau CY. Common pediatric skin lesions: a comprehensive review of the current literature. Semin Plast Surg. 2016 Aug 1;30(3):91.

 