

A Case of Parotid Hemangioma of Infancy: Role of Ultrasound and Doppler in the Diagnosis

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ABSTRACT

Parotid hemangiomas constitute 1-5% of all salivary gland neoplasms. Here we present a case of a 3-month old female baby who was brought with a rapidly enlarging left parotid swelling and a cutaneous strawberry hemangioma over the face. Ultrasonography with colour Doppler may be the

only investigation needed in such a case to establish the diagnosis. Other investigative modalities like contrast enhanced Computerized Tomography (CT) and Magnetic Resonance Imaging (MRI) also helps in confirming the diagnosis. As this tumour regresses spontaneously in its normal course, no active intervention was done and the child is kept under follow up.

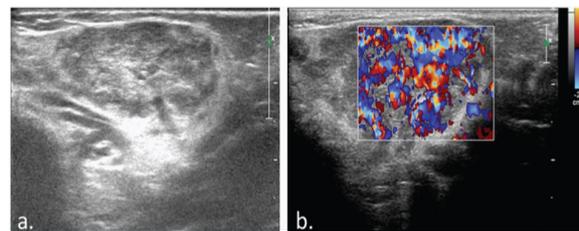
Keywords: Lymphangioma, Salivary gland neoplasm, Swelling

CASE REPORT

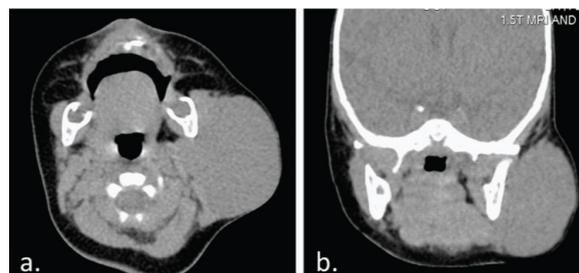
A 3-month-old female baby was brought to the Paediatrics outpatient Department with a swelling in the left parotid region since birth, which has increased in size recently. There was no fever or excessive crying. Antenatal history was unremarkable and the baby was healthy otherwise. On clinical examination, there was a non-pulsatile swelling in the left parotid region. There was a cutaneous strawberry hemangioma noted on the left side of face in the trigeminal (V1 and V2) distribution [Table/Fig-1]. General health of the baby was normal. Blood counts and CRP was within normal limits.



[Table/Fig-1]: Cutaneous hemangioma noted over the left side of face in the trigeminal (V1 and V2) distribution and a swelling in the left parotid region.

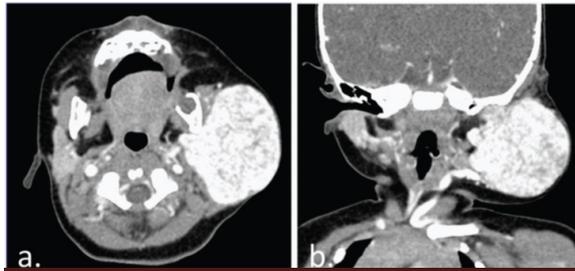


[Table/Fig-2a,b]: (a) The left parotid gland appears enlarged in size and hypoechoic with lobulated contours. Multiple large anechoic vascular channels noted within. (b) Color Doppler reveals high density of blood vessels within the lesion.



[Table/Fig-3a,b]: (a) Non-contrast images showed diffuse enlargement of superficial and deep lobes of left parotid gland with lobulated contour. (b) There was no evidence of any pressure changes in the form of erosion or scalloping in the underlying mandible.

Sonography of the left parotid region was performed on Philips iU22 machine using a 7.5 MHz frequency linear array transducer. The left parotid gland was enlarged in size involving both the superficial and deep



[Table/Fig-4]: Post-contrast images showed intense enhancement of the entire left parotid gland.

lobes and was hypoechoic with lobulated contours. [Table/Fig-2a]. There were large anechoic vascular channels noted within the lesion, which showed colour flow on application of doppler [Table/Fig-2b]. Few sub centimetric lymph nodes were noted in the surrounding region. The right parotid gland was normal in size, echopattern and vascularity. Ultrasonography of the brain was normal.

Computerized Tomography with intravenous contrast was performed. Non-contrast images showed diffuse enlargement of both superficial and deep lobes of left parotid gland with lobulated contour [Table/Fig-3a]. There was no evidence of any pressure changes in the form of erosion or scalloping in the underlying mandible [Table/Fig-3b]. Post-contrast images showed intense enhancement of the entire left parotid gland [Table/Fig-4a-4b].

With these clinical, sonographic and Computerized Tomography findings, a diagnosis of hemangioma of the left parotid gland was made. Parents were reassured of the good prognosis and high chance of spontaneous regression. No active management was done. On follow-up at 13 months of age there was slight decrease in the size of the lesion.

DISCUSSION

Hemangiomas of the parotid gland constitute only 1 to 5 % of all salivary gland neoplasms [1]. Girls are more commonly affected than boys with a ratio of 3: 1 [2]. A small parotid swelling may be present since birth but they usually present at first six months of age with a rapidly enlarging parotid swelling (proliferative phase) which spontaneously regresses by 1 to 7 years of age [3]. The overlying skin may show a bluish tinge. The diagnosis may be supported by a cutaneous strawberry hemangioma locally or at remote site [4].

Ultrasonography will show a well circumscribed homogeneously hypoechoic mass enlarging and replacing most of the parotid gland. It has a lobulated contour and may show fine echogenic internal septations. But the overall shape of the parotid gland is well maintained and no significant extension is seen beyond the gland. The lesion shows numerous large intratumoral blood vessels which is confirmed by application of colour doppler [4].

Computerised Tomography (CT) shows enlarged gland with intense enhancement after intravenous administration of contrast agent. On Magnetic Resonance Imaging (MRI), it appears hypointense on T1WI and hyperintense on T2WI with prominent flow voids and uniform contrast enhancement. Involving hemangiomas may show areas of hyper intensities on T1WI due to fatty replacement. Red Cell Scintigraphy (RCS) is very accurate in the diagnosis of parotid hemangioma. It shows very early uptake of red cells. On delayed phase it shows a well-defined uniform area of intense uptake. Whole body RCS has the advantage of identifying any other hemangiomas in the body [4].

As the tumour regresses by itself no active management is needed. Small lesions can be treated by intralesional steroids or interferon α 2A. Larger ones may need systemic steroids and sclerotherapy. Surgical resection is not recommended due to high chance of facial nerve injury and far better prognosis with expectant management [4].

The major differential diagnosis to be considered is a cystic lymphatic malformation (cystic lymphangioma) which on ultrasonography will show multiple cystic spaces. Solid lymphatic malformations will extend beyond the parotid gland and will not show prominent blood vessels. Congenital infantile fibrosarcoma is a highly vascular tumour that may have similar clinical presentation of rapid growth and spontaneous regression but on ultrasonography it appears inhomogenous [5].

CONCLUSION

In an infant with a typical history of a rapidly enlarging congenital parotid mass, the probability of hemangioma of the parotid gland is very high. Ultrasonography with colour doppler is an inexpensive and safe investigative modality. CT and RCS have the risk of ionising radiation and hence, is less attractive than MRI. Although MRI may reveal typical features like flow voids and uniform contrast enhancement, ultrasonography with colour doppler may prove to be the only investigation needed in many of the cases.

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