On-line Table: Summary of key clinical features and angiographic observations of our cases

Pt.	Age/Sex	No. of Tx	Location	Gross Desc/Presenting Symptoms	Angiographic Features	Materials	*GLUT1*
1	7 yr/F	12 Plus surg rsxn, 3 embo at OSH	L cheek, neck, nuchal area, shoulder	Bluish discoloration and spongy mass	Hypervascular mass; arterial feeders: multiple small branches of left dorso-cervical, suprascapular artery, bilateral occipital artery; tumor stain: late venous phases; draining veins: none	*n*-BCA mixture (1-mL *n*-BCA, 4-mL Ethiodol), 0.3 mL total used	*GLUT1*−
2	8 yr/F	2	L anterior chest wall	Pain; did not respond to QuadraSpheres	2 Foci of lobulated capillary blush, one supplied by intercostal artery, another by segmental branch; main supply from branch of internal mammary artery; extensive collateral interconnection between main feeding artery and adjacent intercostals; small lobules fill in on late arterial and venous phases; dilated draining veins in chest wall	1: QuadraSpheres, 50–100 μm; small amount of 3% sodium tetradecyl Did not respond 2-Ethanol response+	
3	21 mo/F	3	R facial	Not present at birth, increased in size and has not regressed	Hypervascular mass Right facial, transverse facial, buccal, and masseteric; draining veins: markedly enlarged draining vascular structures; venous drainage through facial venous system, maxillary, and pterygomaxillary; also, minor drainage through nasal labial fold, angular vein, and cavernous sinus bilaterally with reflux into contralateral jugular vein	PVA particles, 45–120 μm in 50% ethanol; 5 mL total; PVA and ethanol, 1 mL for total of 6- and 2.3-mL microfibrillar collagen hemostat	
4	44 yr/F	1	Cervical, L retroauricular, shoulder, and forearm	Increased pigmentation and several spots	2 Hypervascular masses; intense blush with left ascending cervical artery run, suggestive of NICH; same for L occipital	Lesion went on to be excised; Surgiflo[d], −23 mL	
5	4 yr/F	2	R parotid	Initial lesion presented at 6 mo of age	Dense tumor stain with supply from right transverse facial branches and right facial artery branches; 5 vascular pedicles (0.15–0.45 mL injected per vessel feeder); postembolization R ECA showed almost complete revascularization of NICH	25% *n*-BCA (1-mL *n*-BCA, 3-mL Ethiodol 0.35 mL)	
6	2 yr/M	1	Left parotid	Significant deformity and pulsations on exam	Enlarged ECA with a very prominent vascular network supplying hemangioma; dense tumor blush, hyperemia, and enlarged draining veins; approximately 80% of the tumor was able to be occluded with both direct puncture and endovascular embolization	Both endovascular embo and direct puncture used 5.2-mL *n*-BCA in a 25% *n*-BCA suspension 3-mL microfibrillar collagen hemostat	

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On-line Table: Continued

Pt.	Age/Sex	No. of Tx	Location	Gross Desc/Presenting Symptoms	Angiographic Features	Materials	*GLUT1*
7	6 yr/M	1	L cheek	Lesion started as size of marble at 1 mo of age and progressively increased in size for 1 yr; the size of the lesion has not changed since then; steroid treatment at 1.5 and 5 yr for 3 mo, and two separate laser treatments at age 2 without improvement; elastic soft-tissue mass L cheek with cutaneous telangiectasia; no pulsation	ECA hypertrophy; hypertrophy of facial and IMA; hypertrophied buccal and lacrimal branches Large lacrimal blush of the middle meningeal artery opacifying the distal ophthalmic artery and choroid blush; upper portion of hypervascular mass supplied by multiple small branches; venous drainage of mass is to retromandibular vein to the external jugular vein; no aneurysms or AV fistulas seen; patent transverse and sigmoid sinuses	Both endovascular embo and direct puncture used, *n*-BCA mixture (1-mL *n*-BCA and 3-mL Ethiodol), total amount of 0.8 mL 40- to 120-μm EmboSpheres[a] mixed with 50% ethanol, total of 1.6 mL Avitene by direct puncture, 5.5 mL	
8	2 yr/F	1	L lower lip	Patient also has involuting hemangiomas of the left forearm, scalp ($n = 2$), and sister has a venous malformation	No endovascular embolization in this case; following establishment of blood flow, small excision of contrast; direct sclerotherapy with 98% ethanol performed	7 Punctures with 3-mL ethanol and 5-mL Avitene	
9	18 mo/F	1, patient had priors	Large R parotid	Previous angiography, embolizations, and direct punctures	Large right transverse facial artery, 5 superselective branches of the right transverse facial artery (5 vascular pedicles); no deposition or anastomosis	25% dilute *n*-BCA, (1-part *n*-BCA, 3-parts Ethiodol)	*GLUT1*+
10	8 yr/M	2	Intraosseous L mandible; biopsy confirmed	Malformation was growing; plan for surgical resection	Tumor blush in the left mandible fed by multiple arteries; the tumor expands the left mandible; feeders from the left facial artery and multiple branches of left IMA; small lakes within the malformation; Onyx embolization resulted in >80% reduction in vascularity; remaining vascularity in superior portion of lesion	Onyx-18[b], total of 7.2 mL Patient also had 2 treatments before surgery	*GLUT1*−

Note:—PVA indicates polyvinyl alcohol; Pt., patient; ECA, external carotid artery; R, right; IMA, internal maxillary artery; L, left; Desc, descending; Tx, treatments; surg rsxn, resection; embo, embolization; OSH, outside hospital; AV, arteriovenous; +, positive; −, negative.

[a] Ethiodol (Andre Guerbet, Melville, New York).

[b] QuadraSphere Microspheres and EmboSphere Microspheres (Merit Medical, Jordan, Utah).

[c] Onyx (Covidien, Irvine, California).

[d] Ethicon (Cincinnati, Ohio).