shunt is routinely kept inflated for several hours after sclerosant administration to prevent systemic embolization. We opted to perform coil embolization of the main draining vein after administration of the sclerosant in lieu of leaving the occlusion balloon in place for several hours.

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Microwave Thermoablation Treatment of Chest Wall Chondroid Hamartoma in a Child

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Editor:

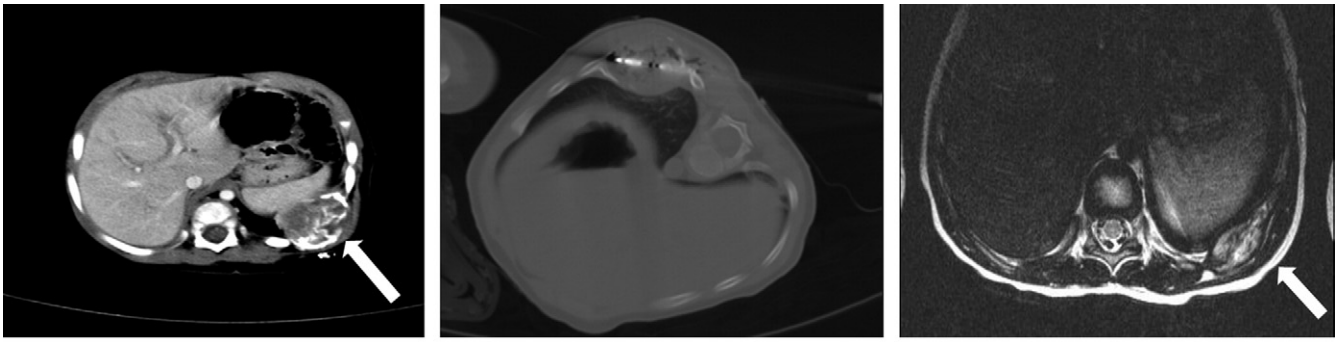
During recent decades, development of new technologies and their clinical applications as minimally invasive therapies have revolutionized management of patients with primary and metastatic tumors, including pediatric patients. In this respect, thermal ablation represents a common technique that was previously used mainly for palliative care, but is now increasingly used with curative intent. Literally, thermal ablation means destruction of material by heating it to cytotoxic temperatures. The two principal thermal ablation modalities developed for clinical use are radiofrequency (RF) and microwave ablation, which work with different physical principles. Although the most commonly accepted use of ablation in children is for the treatment of osteoid osteoma (1), Bertocchini and coworkers (2) described a 6-month-old girl with recurrent chest wall chondroid hamartoma managed successfully with RF thermal ablation.

An 11-month-old boy was admitted to our institution with a left dorsal mass detected during routine pediatric examination. The mass was hard on palpation, oval in shape, and covered by normal skin. Ultrasonography (US) on admission revealed an inhomogenous ovoid lesion of 45 mm × 29 mm × 30 mm with prevalent hypoechoic pattern and multiple areas of calcification, involving the left dorsal region from the paravertebral space to the axillary homolateral region. Chest radiograph also revealed enlargement of the 11th intercostal space with posterolateral erosion of the 10th and 11th left ribs. Complete blood count was normal, as were α-fetoprotein, β-human chorionic gonadotropin, and urinary catecholamine levels. Total body computed tomography (CT) scan confirmed a heterogeneous mass of the left posterolateral chest wall, with multiple cystic and calcific areas (**Fig, a**, arrow). These findings were also confirmed by chest magnetic resonance (MR) imaging. US-guided biopsy was performed with use of an 11 G needle HS Trapsystem (Hospital Service, Aprilia, LT, Italy), and showed a pattern of hypercellular cartilage nodules with enchondral ossification and epiphyseal platelike appearance; spindle cells were also evident. Based on these findings, a chest wall chondroid hamartoma was hypothesized and microwave ablation therapy was performed. Under CT guidance, a microwave antenna (12-cm length, 3-cm linear electrode Evident MW Ablation System, 915 MHz; model VT1237; Covidien, Boulder, Colorado) was percutaneously inserted parallel to the longitudinal rib edge and connected to a microwave generator (VTGEN; Covidien, Boulder, Colorado) for 10 minutes with 45 W developed power (**Fig, b**). The postoperative course was uneventful, and the patient was discharged on postoperative day 2 in good general condition, without any evidence of skin lesion at the electrode insertion site. At 1 month, a predominantly solid lesion measuring 40 × 25 × 22 mm, without any calcification, was shown on follow-up US. Chest radiograph at 3 months showed reduction of the 11th left intercostal space enlargement with no scoliotic deformation. Chest MR imaging performed 8 months later demonstrated further reduction of the mass (30 × 30 × 15 mm; **Fig, c**, arrow). At 18-month follow-up, the child (age 29 mo) was alive and free of disease.

Treatment of asymptomatic chest wall chondroid hamartoma is controversial, with complete spontaneous regression being reported in several cases (2). Because

None of the authors have identified a conflict of interest.

DOI: 10.1016/j.jvir.2011.03.011



a. b. c.

Figure. **(a)** CT scan shows a mixed pattern of chest wall chondroid hamartoma, with secondary aneurysmal bone cyst and calcifications (arrow). **(b)** Microwave ablation was performed under CT guidance. **(c)** MR image at 8 months (spin-echo T1-weighted sequence) shows reduction of the mass and regrowth of costal edge (arrow).

en-bloc removal of the lesion could cause several intra- and postoperative complications, especially for chest wall tumors, minimally invasive procedures have gained progressive popularity in children, with thermal ablation representing a valid option (3). Although our patient was asymptomatic, treatment was indicated because of a rapidly enlarging lesion with rib erosion, making spontaneous regression unlikely. In this respect, RF thermal ablation is being successfully used for treatment of osteoid osteoma and painful bone metastases (1,4). Since the initial description of Bertocchini et al (2), the only reported application of this method in pediatric oncology of which we are aware is the one of Hoffer and coworkers (4), who treated the largest series published so far (N = 21). Nonetheless, the same authors (4) reported a nonnegligible complication rate, with skin burns on the site of the grounding pads related to resistive heating (ie, Joule effect) generated by the passage of current through tissues.

In recent years, several authors described treatment of bulky lesions, such as liver and pulmonary metastases (3), with microwave ablation, the clinical use of which has rapidly disseminated in adult patients because of the advantages of a lack of current through the tissues (ie, no Joule effect) and heat-sink effect. Those characteristics make microwave ablation suitable for management of lesions as large as 5 cm in diameter (3). Microwave ablation may show a better effect on this tissue compared with RF ablation in terms of improved penetration, minor reduction of effects from heating or dehydration, and higher intratumoral temperature (3). Based on these findings, we believed microwave ablation to be the treatment of choice in the present case, given the significant complication rate reported with RF ablation, which makes it unsuitable for small children with large lesions (> 5 cm), as in our case.

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Use of a Flow-Diverting Uncovered Stent for the Treatment of a Superior Mesenteric Artery Aneurysm

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Visceral artery aneurysms are an uncommon subgroup of vascular aneurysms with a prevalence of 0.1%–2% (1). A diameter of 2 cm is commonly regarded as an indication for repair of asymptomatic aneurysms. In recent years, there has been increased use of endovascular treatment options, including covered stent placement, coil implantation, and coil-assisted stent placement (2). However, these techniques are not suitable for all aneurysms. Coil embolization may not be possible in a wide-necked aneurysm if the parent vessel is to be preserved. Stent-grafts may be too large or rigid to be placed in small, peripheral vessels, and may cover an essential branch. We therefore present an additional endovascular treatment option for challenging

None of the authors have identified a conflict of interest.

DOI: 10.1016/j.jvir.2011.02.006