


Percutaneous Cholecystostomy and Hydrodissection in Radiofrequency Ablation of Liver Subcapsular Leiomyosarcoma Metastasis Adjacent to the Gallbladder: Protective Effect.

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ABSTRACT

Uterine leiomyosarcoma is an uncommon pathology, predominantly found in aged population. Patients with metastatic disease have poor survival and therapy mainly consists of palliative systemic chemotherapy. However, more aggressive strategies such as radiofrequency ablation (RFA) may benefit patients with limited secondary disease. RFA is considered a simple and safe modality for treatment of hepatic lesions. The benefits related to RFA include low morbidity, short hospital stay and the possibility to repeat the procedure when necessary due to recurrences. However, minor and major complications related to mechanical and thermal damage may occur, especially in cases of tumors adjacent to extrahepatic organs and those at subcapsular position. This case report shows a successful RFA of two hepatic subcapsular leiomyosarcoma metastases neighbouring the gallbladder, without a safe cleavage plane from it. Combined hydrodissection, percutaneous cholecystostomy and continuous irrigation were performed as effective techniques to prevent thermal injury. Clinical and radiological follow up demonstrates no local complication.

CASE REPORT

CASE REPORT

A 48 year old female patient with previous history of resected uterine leiomyosarcoma and liver metastasis (Figure 1) was on clinical and radiological monitoring. A Magnetic resonance imaging (MRI) showed, despite systemic chemotherapy, progression of four metastatic hepatic nodules with peripheral hypervascular enhancement. Two of this lesions were neighbouring the gallbladder (segments V and IV), in subcapsular localization, close to the abdominal wall, measuring 2.4 cm and 2.0 cm (Figure 2). After multidisciplinary tumor board review, she was referred to RFA treatment.

Patient was positioned in slight left lateral decubitus and the percutaneous access was planned (Figure 3). Dispersive electrodes grounding pads were placed on the patient's thigh. In order to protect the gallbladder from thermal injury caused by RFA, since one of these nodules was adjacent to the gallbladder fundus, a challenging situation, it was decided to perform an ultrasound (US) guided cholecystostomy (IU22 Philips - Philips Healthcare) before the procedure (Figure 4). A Dawson Muller drainage catheter 8.5 Fr (Cook Medical) was inserted in the gallbladder (Figure 4) using the Seldinger technique (Turner needle 18 G x 15 cm Cook Medical; Standard J-Tip guide wire 0.035 in x 150 cm Cordis Corporation). Bile was aspirated in order to decompress the

gallbladder. Then, continuous irrigation with cooled saline solution at 10°C and aspiration (flow rate of 15 ml/minute) was performed during all the procedure.

Another concern was the subcapsular location of the lesions and their proximity to the abdominal wall. Thus, in order to increase this distance, a percutaneous hydrodissection was performed. The subphrenic/subhepatic space was punctured with a Turner needle (22 G x 20 cm) and 700 ml of Iodinated contrast media 300 mg I/mL (Omnipaque - GE Healthcare) in dextrose solution (mixture ratios of 1:50) was injected, creating an artificial perihepatic ascites (Figures 5 and 6).

After these thermal protection techniques, the RFA needle (Cool-tip™ RFA Cluster Electrode ACT 2035 - Covidien) was positioned into the lesions guided by US and the procedure was safely performed (figures 7, 8 and 9). The lesions were heated to reach tissue temperatures greater than 70 °C for 12-minute radio frequency cycle. A second 12-minute cycle was applied to each lesion. CT was performed between the cycles to control needle position and any possible complication (Figures 5, 6 and 10). These procedures were performed under general anesthesia.

Computed tomography (CT) immediately after the procedure showed adequate ablation zone and no signs of complications. Follow-up MRI two months after the procedure demonstrated the gallbladder usual appearance and effective ablation zone without residual hypervascular areas or signs of inflammation (Figures 11 and 12).

DISCUSSION

Etiology & Demographics:

Uterine leiomyosarcoma is an uncommon pathology, predominantly found in aged population, with a median age of 60 year and a twofold incidence in African-American. It is mostly incidentally diagnosed after surgery for uterine fibroid disease, representing about 1% of all malignancies in this organ. It is an aggressive disease and survival after initial diagnosis has been reported to be 50% in early stage and dismal in advanced-stage disease. In most patients with extrauterine disease, recurrence occurs within 18 months from the initial diagnosis. Metastases originated from these tumors may affect pulmonary, abdominal and pelvic organs [1].

Clinical & Imaging findings:

Clinical findings of leiomyosarcoma metastatic liver lesions are similar to any secondary neoplastic disease of this organ, including nausea, anorexia, weight loss, abdominal discomfort or pain, jaundice, ascites and hepatomegaly. Usually, the imaging findings are related to their hypervascular nature, consisting of an arterial phase hyperenhancement on CT or MRI, which washes out on delayed scan. Some arterial hypervascular lesions may show decrease or even a total lack of arterial enhancement after chemotherapy [2]. US findings are variable and hypochogenic appearance is more frequently observed.

Treatment & Prognosis:

Uterine leiomyosarcomas are aggressive tumors with poor 5-year survival rates which vary between 15% and 25% for all stages [1]. Treatment options for patients with metastatic disease mainly consist of palliative systemic chemotherapy. However, more aggressive strategies, such as RFA, may benefit patients with limited secondary disease. Introduced in early 90's, it is considered an effective alternative treatment to surgical resection for primary and some metastatic liver malignancies [3].

The mechanism of RFA involves the flow of electrical alternating current through tissues, causing ionic agitation, resistive heating and thermal cell injury. The RFA system requires a closed-loop circuit, based on an electrical generator, a needle electrode, a patient (a resistor) and land dispersive electrodes ("grounding pads") placed on the patient skin. The marked discrepancy between the surface area of the needle electrode and the grounding pad causes the generated heat to be concentrated around the needle electrode. For successful ablation, the tissue temperature should be maintained in the ideal range, which is 60–100°C. Safe ablation margins should preferentially be approximately 1 cm [4]. Each treatment includes 1 cycle of 12 minutes ablation. Two consecutive cycles with inter-ablation needle adjustment may be necessary to assure adequate ablation margins.

The Cool-tip™ system, one of the three major commercial RF ablation systems, uses internally cooled electrodes, which minimize charring and permit optimal energy deposition and deeper tissue heating. Multiple probe systems (cluster needle) can achieve greater coagulation necrosis than any individual electrode alone. Selection of RFA ablation needles (type and number) is also important to prevent complications [4].

The RFA effectiveness has been described in various studies in medical literature [5, 6]. Despite surgery being considered the best treatment option for most tumors, only 5% to 15% of patients with liver neoplasms are candidates due to multilobar or extra-hepatic disease, proximity to major bile ducts and vessels, insufficient liver reserve and co-morbidities [3, 7].

Among the eligible patients for minimally invasive ablative treatment, it has been reported that the survival rate after RFA was comparable to that after surgery for small (≤ 3 cm) hepatocellular carcinomas [8, 9]. The 4 year overall survival rates after these modalities were 67.9% and 64.0%, respectively [8]. The role of RFA as a treatment in some metastatic lesions is also well established [5, 7].

As a minimally invasive procedure, RFA is considered a simple and safe modality for treatment of hepatic lesions, considering the already well known risks of surgical conventional therapies. The benefits related to RFA include low morbidity, short hospital stay and the possibility to repeat the procedure when necessary due to recurrences [5]. Mortality related to this procedure is low, reported in some literature issues as low as 1% [3].

However, minor and major complications related to mechanical and thermal damage may occur, being reported from 5 to 25% [6]. Tumor type, as well as its location, size, number of lesions, type of approach, underlying hepatic disease, associated previous hepatic resection and the physician's experience have been described as factors significantly associated with higher levels of complications [3]. Tumor seeding, pleural effusion, pneumothorax, gastrointestinal perforation, intraperitoneal bleeding and skin burns are some examples [10]. Biliary tract damage such as bile duct injuries, biliary stricture, bilomas, bilio peritoneum, bilio pleural fistula and cholecystitis might also occur [3]. Patients with biliary dilatations have an increased risk of developing a post procedural abscess or sepsis because of bacterial colonization in the biliary tract. Prophylactic antibiotics may be beneficial for these patients [4].

In order to decrease the risk of bleeding and tumor seeding, exophytic lesions should be avoided. Transhepatic route rather than a direct route should be selected to approach peripheral tumors. Also, the puncture site should be selected as anteriorly and inferiorly as possible, to prevent a pneumothorax because the pleural space extends more inferiorly in the posterior chest [4].

Tumors adjacent to some extrahepatic organs, such as the intestines, the gallbladder and those at subcapsular position may be related to complications. Some authors have recommended not using RFA in these cases. But it has also been suggested a minimum distance of 5 mm to avoid injury of this structures by the thermal process [11].

Some thermal protection techniques have been described. For example, in subcapsular tumors, fluid injection (hydrodissection) is an effective method to turn the extrahepatic space wider [11]. It should be performed with sterile water or 5% dextrose rather than saline because the latter conducts electricity. The use of iodinated contrast solution improves differentiation among the hydrodissection fluid, renal tumor and adjacent tissues, leading to potentially safer cryoablation [12, 13]. During energy application, the tip of the hydrodissection needle should be placed at least 1 cm away from the tip of the RF applicator [4].

However, in tumors adjacent to peri-hepatic organs, such as the gallbladder, artificial fluid injection may not achieve an effective separation [11]. Gallbladder percutaneous needle decompression for thermal protection has been described to separate or retract its peritoneal surface from a contiguous hepatic radiofrequency ablation zone [14]. Moreover, it has been even reported that the intraductal cooling of the biliary tract (intraoperative or through endoscopic nasobiliary drainage) using chilled saline during RFA can prevent bile duct stricture [15]. US-guided percutaneous cholecystostomy (PC) associated with combined irrigation can be another effective way to protect the gallbladder from thermal injury during RFA.

In this reported case of a critical oncological patient, the damage of the gallbladder causing inflammatory process or even perforation would be situations that could be associated

to high morbidity rates. So, a less invasive method with associated gallbladder thermal protection was considered an excellent therapeutic option.

The RFA treatment was safely performed after an effective gallbladder protection with percutaneous cholecystostomy combined to continuous cooled saline irrigation and hydrodissection. The control exams, immediately and two months after the procedure, showed successful nodules treatment without complications related to the liver or to the gallbladder.

Differential Diagnoses:

General imaging differential considerations include primary and secondary arterial hypervascular hepatic nodules. Among the possible primary lesions, hepatocellular carcinoma, haemangioma, focal nodular hyperplasia and hepatic adenoma are the most common. Although the majority of liver metastasis have lower enhancement than the surrounding liver tissue in arterial phase, some primary tumors produce hyperenhancing metastasis, such as leiomyosarcoma, as well as renal cell carcinoma, thyroid carcinoma, neuroendocrine tumors, choriocarcinoma, melanoma and breast cancer.

TEACHING POINT

Percutaneous cholecystostomy combined with continuous cooled saline irrigation and hydrodissection are effective techniques to prevent thermal injury when performing RFA on hepatic lesions without a safe cleavage plane from the gallbladder or close to the abdominal wall.

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FIGURES

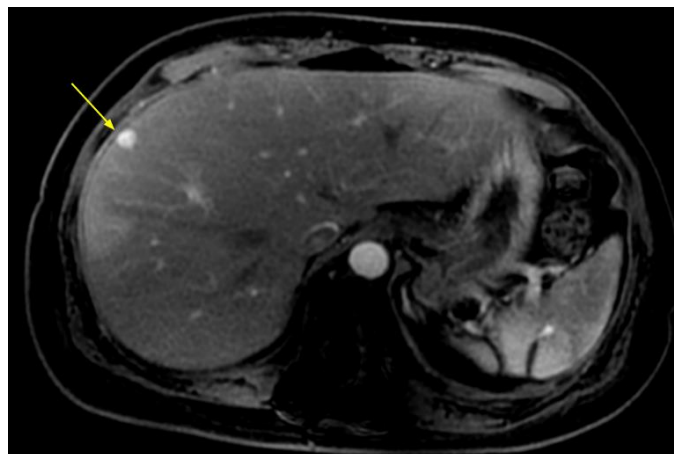


Figure 1: 48-years-old female with metastatic uterine leiomyosarcoma. Axial post contrast T1WI MRI, 5 months before RFA treatment, demonstrates a metastatic hypervascular nodule in liver segment VIII (arrow). Note the signal void caused by a lumbar spinal fixation device. [Technique: GE 1.5 Tesla Magnet. T1WI fat suppression post-contrast (Gadovist Bayer 604,72 mg/mL); arterial phase. TR 6.97 msec, TE 3.13 msec].



Figure 2: 48-years-old female with two metastatic hepatic nodules from uterine leiomyosarcoma. Axial T1WI post-contrast MRI demonstrates two nodules with discrete peripheral hypervascular enhancement (arrows) adjacent to the gallbladder (arrowhead). Note the signal void caused by a lumbar spinal fixation device. [Technique: GE 1.5 Tesla Magnet. T1WI fat suppression post-contrast (Gadovist Bayer 604,72 mg/mL); arterial phase. TR 6.92 msec, TE 3.13 msec.]

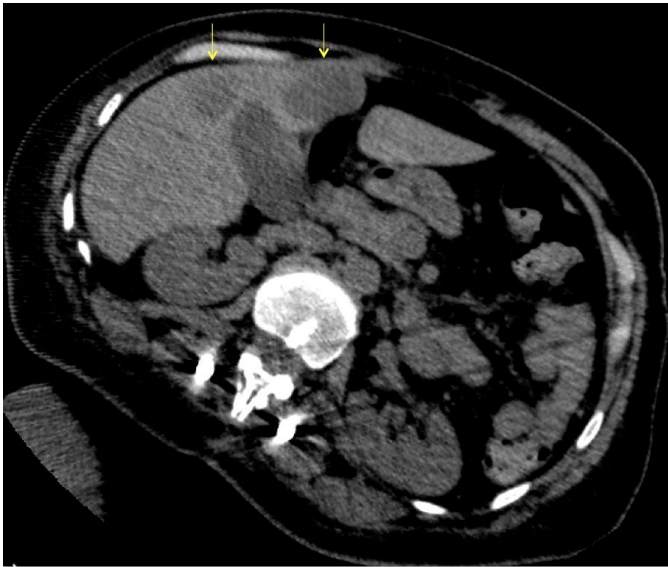


Figure 3: 48-years-old female with two metastatic hepatic nodules from uterine leiomyosarcoma. Noncontrast axial CT scan demonstrates two metastatic hypodense nodules (arrows). Patient was positioned in slight left lateral decubitus and the percutaneous access was planned. Note the lumbar spinal fixation device. [Technique: Toshiba Aquilion ONE. KV = 100; mAs = 150; Slice Thickness = 3 mm; no intravenous/oral contrast].



Figure 5: 48-year-old female with metastatic uterine leiomyosarcoma. Noncontrast axial CT scan demonstrates an 8.5 Fr Dawson Muller catheter (arrow) implanted in the gallbladder (arrowhead); bile was aspirated and a continuous irrigation with cooled saline solution was initiated. Note the hydrodissection with dextrose solution and contrast (asterisk), one ablation needle (black arrow) and the lumbar spinal fixation device. [Technique: Toshiba Aquilion ONE. KV = 100; mAs = 150; Slice Thickness = 3 mm; Reformatted image (oblique); MIP (10mm); no intravenous/oral contrast].

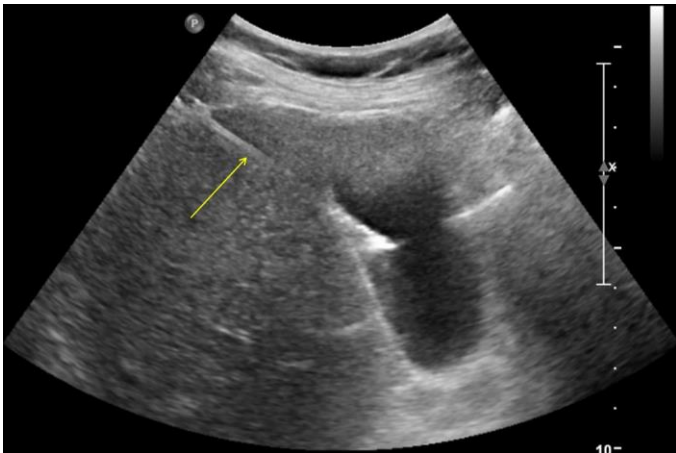


Figure 4: 48-years-old female with metastatic uterine leiomyosarcoma. Ultrasound guided percutaneous cholecystostomy: a transhepatic access was performed using a Turner needle 18 G (Arrow). [Technique: US IU22 Philips - Philips Healthcare].

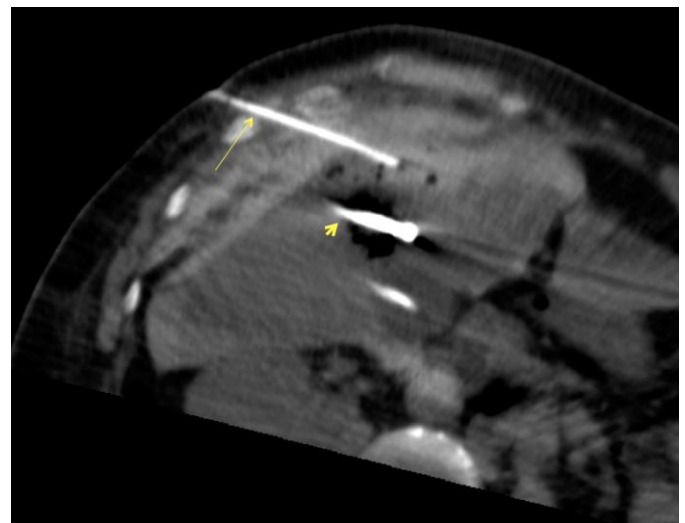


Figure 6: 48-years-old female with metastatic uterine leiomyosarcoma. Noncontrast axial CT scan: In order to increase the space between the liver and the abdominal wall, hydrodissection with dextrose solution and contrast was performed using a Turner needle 22 G (arrow). Note the first ablation needle (arrowhead) in one of the nodules and the gas produced during the ablation cycle around it. [Technique: Toshiba Aquilion ONE. KV = 100; mAs = 150; Slice Thickness = 3 mm; Reformatted image (oblique); no intravenous/oral contrast].

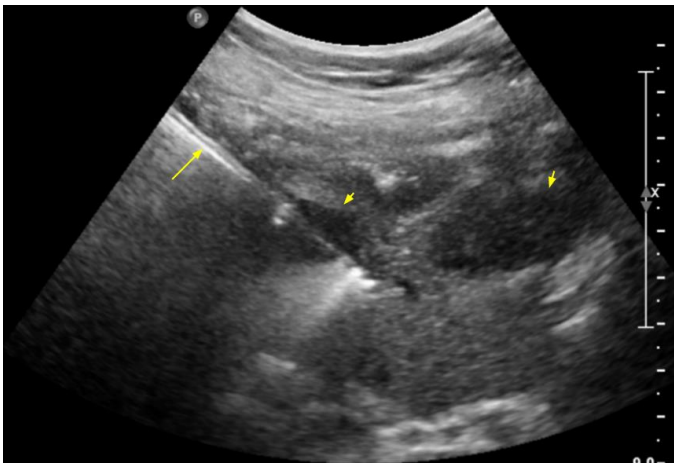


Figure 7: 48-years-old female with metastatic uterine leiomyosarcoma. US guided RFA (Cool-tip™ RFA Cluster Electrode ACT 2035 - Covidien): two hypoechoic hepatic nodules (arrowheads). Note the ablation needle (arrow) in the first nodule. [Technique: US IU22 Philips - Philips Healthcare].

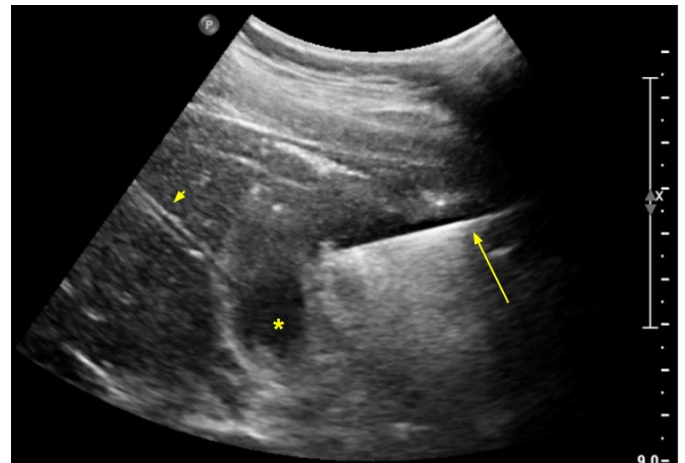


Figure 9: 48-years-old female with metastatic uterine leiomyosarcoma. US guided RFA (Cool-tip™ RFA Cluster Electrode ACT 2035 - Covidien): the second ablation needle (arrow) in one nodule. Note the Dawson Muller catheter (arrowhead) implanted in the gallbladder (asteriscus). [Technique: US IU22 Philips - Philips Healthcare].

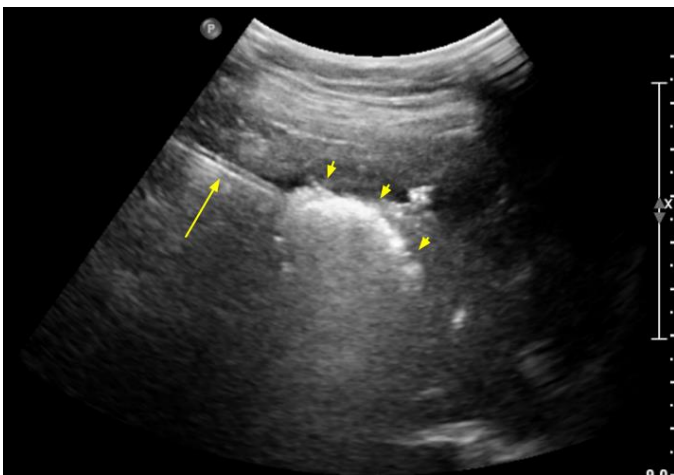


Figure 8: 48-years-old female with metastatic uterine leiomyosarcoma. US guided RFA (Cool-tip™ RFA Cluster Electrode ACT 2035 - Covidien): the ablation needle (arrow) positioned in the first nodule. Note the intense hyperechoic artifact caused by gas production during the ablation cycle (arrowheads). [Technique: US IU22 Philips - Philips Healthcare].

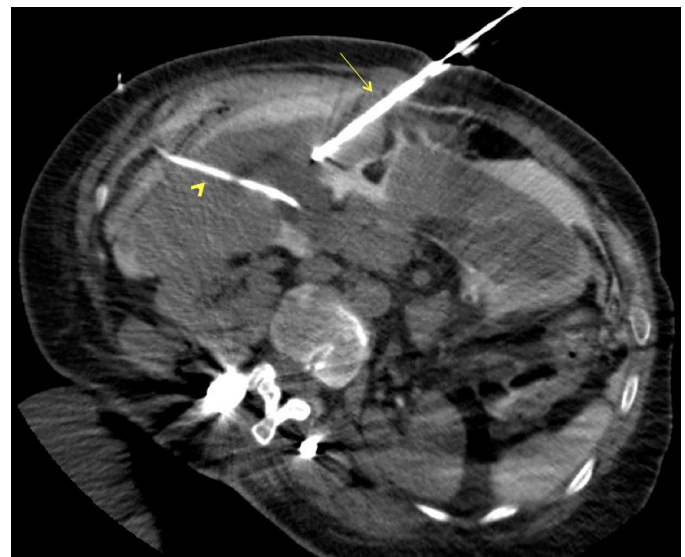


Figure 10: 48-years-old female with metastatic uterine leiomyosarcoma. Noncontrast axial CT scan: the second probe adjacent to the gallbladder (arrow). Note the catheter of cholecystostomy (arrowhead). [Technique: Toshiba Aquilion ONE. KV = 100; mAs = 150; Slice Thickness = 3 mm; Reformatted image (oblique); No intravenous/oral contrast].



Figure 11 (left): 48-years-old female with two metastatic hepatic nodules from uterine leiomyosarcoma. Post-contrast coronal CT scan immediately after the procedure demonstrates ablation zones (arrows) without residual hypervascular areas and the gallbladder (arrowhead) usual appearance, without inflammatory signs. Note the hyperdense fluid (arrowheads) displaced from subphrenic/subhepatic space, infiltrating the peritoneal fat. [Technique: Toshiba Aquilion ONE. Technique: KV = 100; mAs = 150; Slice Thickness = 3 mm; reformatted (coronal) post intravenous contrast (Omnipaque 300 mg I/mL - GE Healthcare), arterial phase.]

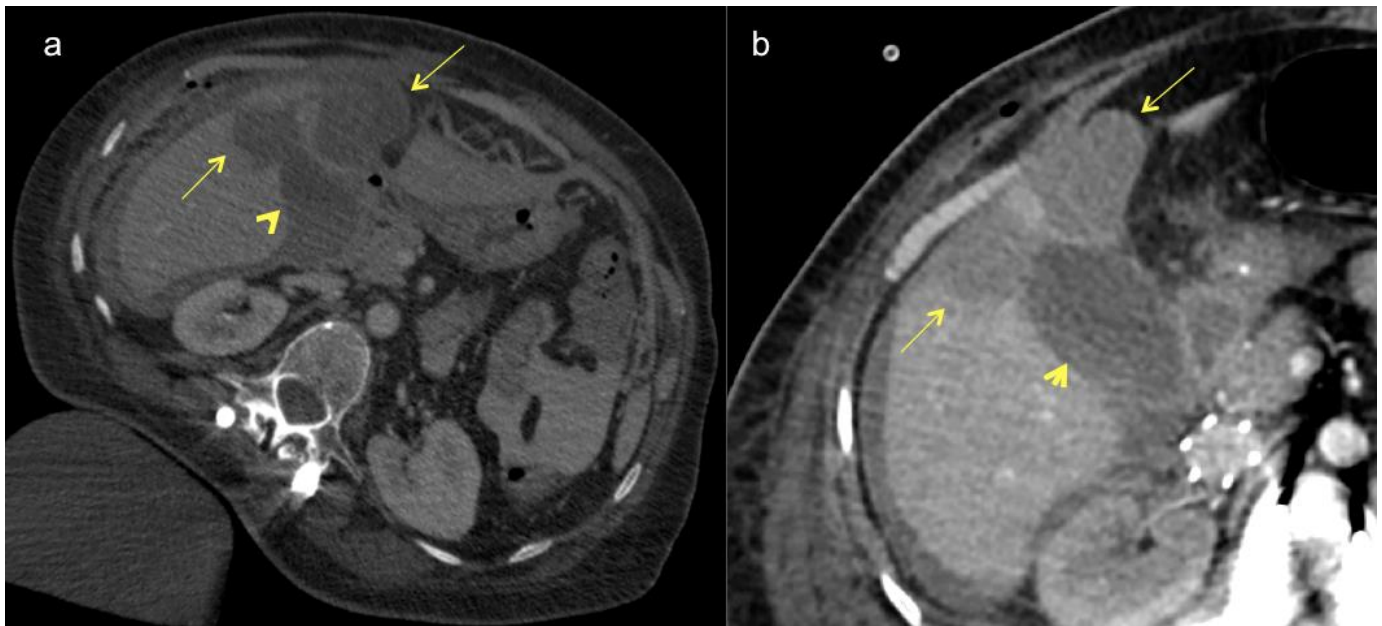


Figure 12: 48-years-old female with two metastatic hepatic nodules from uterine leiomyosarcoma. Post-contrast axial CT scans immediately (a) and one month (b) after the procedure demonstrate ablation zones (arrows) without residual hypervascular areas and the gallbladder (arrowheads) usual appearance, without inflammatory signs. Note the inferior vena cava filter (b). [Technique: Toshiba Aquilion ONE. Technique: KV = 100; mAs = 150; Slice Thickness = 3 mm; post contrast (Omnipaque 300 mg I/mL - GE Healthcare) arterial phase (a), Toshiba Aquilion ONE. Technique: KV = 120; mAs = 80; Slice Thickness = 3 mm; post intravenous contrast (Omnipaque 300 mg I/mL - GE Healthcare), arterial phase (b).]

Etiology	Metastatic uterine leiomyosarcoma.
Incidence	Leiomyosarcomas represent 30 % of all uterus sarcomas (others: sarcomas and carcinosarcomas). About 1% of uterine leiomyosarcomas are metastatic.
Gender Ratio	Female gender only.
Age Predilection	More common in elderly. Peak of incidence occurring at age 50.
Risk factors	Prior pelvic radiation therapy (in 10 % to 25 % of cases). Increased incidence of uterine sarcoma has been associated with tamoxifen in the treatment of breast cancer.
Treatment	Surgery alone can be curative only if the malignancy is contained within the uterus. The value of pelvic radiation therapy is not established. Chemotherapy for patients with advanced disease (phase II trials). A selected subgroup of patients with limited metastatic disease may eventually benefit from more aggressive strategies, such as RFA treatment.
Prognosis	The prognosis for women with metastatic uterine leiomyosarcoma is primarily dependent on the extent of disease at the time of diagnosis. The 5-year survival rate for women with early stage disease (non metastatic) is approximately 50% versus 0% to 20% for the remaining stages.
Findings on imaging	The uterus, when no resected, is often massively enlarged showing irregular central zones of extensive necrosis and hemorrhage. The imaging findings of metastatic liver lesions are variable. Hypoechoic appearance is more frequently observed on US and arterial phase hyperenhancement on CT or MRI, which washes out on delayed scan, is usually seen.

Table 1: Summary table for metastatic uterine leiomyosarcoma.

Lesion	US	CT	MRI	Nuclear Medicine
Hepatocellular Carcinoma	Small lesions appear hypoechoic. Larger lesions are heterogeneous due to fibrosis, fatty change, necrosis and calcification. A peripheral halo of hypoechogenicity may be seen with focal fatty sparing.	Enhancement pattern is the key to the correct assessment: vividly enhancement during late arterial phase; washes out rapidly, indistinct or hypoattenuating in the portal venous phase, compared to the rest of the liver. Rim enhancement may persist.	T1: variable iso or hyperintense. T1 C+ (Gd): hypervascularity and rapid "washout". Rim enhancement may persist. T2: variable, typically moderately hyperintense.	High grade lesions are FDG avid. Decreased uptake in low-grade lesions. Lower sensitivity than that of other imaging modalities. May play a role in prognosis.
Haemangioma	Typically well-defined hyperechoic lesions. A small proportion are hypoechoic, which may be due to a background of hepatic steatosis. Colour Doppler may show peripheral feeding vessels.	Noncontrast series: hypoattenuating. Arterial phase: discontinuous, nodular, peripheral enhancement. Portal venous phase: progressive peripheral enhancement with more centripetal fill-in. Delayed phase: irregular fill-in and iso- or hyper-attenuating to liver parenchyma.	T1: hypointense relative to liver parenchyma. T2: hyperintense relative to liver parenchyma. T1 C + (Gd): often shows peripheral nodular discontinuous enhancement which progresses centripetally (inward) on delayed images. Contrast retention on delayed (>5 minutes).	⁹⁹ Tc RBC labelled SPECT can be sensitive for larger lesions and typically demonstrate decreased activity on initial dynamic images followed by increased activity on delayed, blood pool images.
Focal Nodular Hyperplasia	Variable echogenicity. Central scar with the displacement of peripheral vasculature on colour Doppler (20 % of cases).	Noncontrast series: hypo- or isoattenuating; a hypoattenuating central scar can be seen. Bright arterial contrast enhancement except for the central scar which remains hypoattenuating. Hypo/isoattenuating to liver in the portal venous phase. Enlarged central arteries may be seen. The fibrotic scar demonstrates enhancement on delayed scans in up to 80% of cases.	T1: iso to moderately hypointense; T2: iso to somewhat hyperintense; hyperintense central scar. T1 C+ (Gd): intense early arterial phase enhancement; central fibrotic scar retains contrast on delayed scans; isointense to liver on portal venous phase.	The presence of Kupffer cells in FNH allows these lesions to take up technetium (Tc) ^{99m} sulphur colloid in 80% of cases. Helpful in distinguishing FNH from hepatic adenomas, HCC and hepatic metastases.
Hepatic Adenoma	Usually presents as a solitary well-demarcated heterogeneous mass. Echogenicity is variable. A hypoechoic halo of focal fat sparing is also frequently seen. Colour Doppler may show perilesional sinusoids.	In general, well margined and isoattenuating. Variable attenuation, depending on fresh haemorrhage (hyper) or fat content (hypo). C+: transient relatively homogenous enhancement on arterial phase returning to near isodensity on portal venous and delayed phase image.	T1: variable. T2: often mildly hyperintense. Signal drop out on out-of-phase imaging. T1 C+ (Gd): Early arterial enhancement, nearly isointense on delayed images. (Eovist): hypointense on hepatobiliary phase.	Classically focal photopenic lesion on Tc ^{99m} sulphur colloid; uptake may be seen in up to 23% of cases. Increased activity on a HIDA scan, but does not take up gallium on a gallium scan.
Secondary: Thyroid Carcinoma Neuroendocrine Tumors Leiomyosarcoma Choriocarcinoma Melanoma Breast Cancer	In general, metastases may appear as rounded and well defined hypoechoic nodules, with positive mass effect and distortion of adjacent vessels. Hypoechoic halo due to compressed and fat spared liver may be present.	Arterial phase hyperenhancement which washes out on delayed scan.	Arterial phase hyperenhancement which washes out on delayed scan.	Liver metastases are generally FDG avid and therefore are detected easily by FDG PET.

Table 2: Differential diagnosis table for arterial hyperenhancing hepatic lesions.

Radiofrequency ablation of liver tumors	
Development	Early 90's. First clinical study in 1995
Mechanism	Thermoablative technique that induces temperature changes by utilising high-frequency alternating current applied via an electrode placed within the tissue to generate ionic agitation and friction heat. For successful ablation, the tissue temperature should be maintained in the ideal range, which is 60–100°C.
Therapeutic proposal	Locoregional treatment
Cellular damage	Coagulative necrosis and tissue desiccation
Advantages	Eligible for most of lesions, relatively low cost, short hospitalization time, minimal invasiveness, low morbidity, enables excellent local tumor control.
Indications	Hepatocellular carcinoma and liver metastasis.
Recommendations	Operators should ensure a sufficient ablative margin in order to reduce local recurrence and be familiar with multiple technical strategies such as hydrodissection to avoid complications.
Limitations	Temperature rise in ablation zone can vary widely according to the local tissue environment. Growth of the ablation zone can be attributed primarily to thermal diffusion.
Complications	Liver abscess, tumor seeding, pleural effusion, pneumothorax, gastrointestinal perforation, intraperitoneal bleeding and skin burns. Biliary tract damage such as bile duct injuries, biliary stricture, bilomas, bilioperitoneum, biliopleural fistula and cholecystitis.
Factors associated with complications	Tumor type, location and size. Number of lesions, underlying hepatic disease, associated previous hepatic resection and physician's experience.

Table 3: Summary table for US guided percutaneous radiofrequency ablation of liver tumors.

Thermal protection technique	Description
Hydrodissection	Peritoneal fluid injection next to subcapsular tumor is an effective method to turn the extrahepatic space wider, protecting adjacent organs and abdominal wall.
Gallbladder percutaneous needle decompression	Separates or retracts its peritoneal surface from a contiguous hepatic radiofrequency ablation zone.
Intraductal cooling of the biliary tract	Intraoperative or through endoscopic nasobiliary drainage using chilled saline.
Percutaneous cholecystostomy	Separates or retracts its peritoneal surface from a contiguous hepatic radiofrequency ablation zone. Irrigation using chilled saline can be associated.

Table 4: Thermal protection techniques in liver radiofrequency ablation.

ABBREVIATIONS

CT = Computed Tomography
 MRI = Magnetic Resonance Imaging
 PC = Percutaneous cholecystostomy
 RFA = Radiofrequency ablation
 US = Ultrasound

KEYWORDS

Leiomyosarcoma; Hepatic metastasis; Gallbladder; Radiofrequency Ablation; Cholecystostomy; Hydrodissection

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