

## CLINICAL VIGNETTE

# Diffuse Hepatic Masses

Mahshid Mosallaei-Benjamin, M.D., and Joshua Rosenberg, M.D.

A 40-year-old premenopausal female with severe abdominal pain underwent a CT scan revealing multiple liver masses suspicious for malignancy. Her CT scan also revealed enlarged ovaries bilaterally containing both simple and complex cysts with a heterogeneous endometrium. Patient had been on intermittent OC (oral contraception) for 3-5 years with last use 10 years ago. She also used OC for several years as a teenager. Abnormal labs included WBC 12 (with elevated neutrophils, monocytes and lymphocytes), HB 10.6, MCV 71, platelets 527, glucose 133, CA 125 163. All other labs including liver enzymes, alpha fetal protein, coagulation studies, Hepatitis panel, HIV test, and Antinuclear antibody were normal.

PET/CT scan revealed: "Numerous large hepatic lesions measuring up to 7 cm in size" with hypermetabolic activity suspicious for liver metastases. A 5x4 cm septated mild hypermetabolic left ovarian mass with large cysts in the right ovary along with an irregular hypermetabolic endometrium.

Three CT guided core liver biopsies demonstrated liver tissue containing macro and microvesicular steatosis, but no evidence of malignancy, with features consistent with hepatocellular adenoma.

An endometrial biopsy was interpreted as "benign proliferative endometrium," without any evidence of malignancy or hyperplasia. Patient underwent robotic-assisted left salpingectomy along with pelvic washings. She had extensive dense adhesions between colonic tissue, ovaries, and fallopian tube along with multiple large cysts on liver surface. Surgical pathology was consistent with endometriosis along with ovarian cysts, without any evidence of malignancy.

### *Discussion of nonmalignant hepatic masses*

**Hepatic hemangioma** – Hepatic hemangiomas are the most common benign mesenchymal hepatic tumors, considered to be congenital vascular malformations. Hemangiomas are diagnosed at any age, with the majority diagnosed in patients between the ages of 30 and 50 years. Symptomatic lesions are often more than 4 cm in size and are more common in young women.<sup>1,2</sup> Hormonal influence is suggested by enlargement of tumor in women on estrogen therapy. However, tumor growth is seen in the absence of exogenous estrogen and in postmenopausal females.<sup>3</sup> Based on size and symptoms, these liver masses are often only monitored.

**Hepatocellular adenoma (HCA)** – HCA are uncommon benign liver tumors that develop mostly in premenopausal women between the ages of 20 to 44 years old and are typically a single lesion. They are also associated with androgen use and glycogen storage disease.

Population studies have shown longer duration of OC use increases the risk of HCA.<sup>4,5,6</sup> Use of OCs with high hormonal potency and age over 30 years may further increase a woman's risk.

Regression of adenomas can occur after cessation of OC use.<sup>7</sup> Malignant transformation is reported to be between 8 to 13 percent, so patients should be monitored.<sup>8</sup>

Management includes discontinuation of OCs, monitoring lesions, and resection of symptomatic lesions. Liver transplantation should be considered in patients with very large or multiple tumors.

Our patient was eventually sent for evaluation of liver transplant due to both size and number of her lesions.

### REFERENCES

1. **John TG, Greig JD, Crosbie JL, Miles WF, Garden OJ.** Superior staging of liver tumors with laparoscopy and laparoscopic ultrasound. *Ann Surg.* 1994 Dec;220(6):711-9. PubMed PMID: 7986136; PubMed Central PMCID: PMC1234471.
2. **Adam YG, Huvos AG, Fortner JG.** Giant hemangiomas of the liver. *Ann Surg.* 1970 Aug;172(2):239-45. PubMed PMID: 5433290; PubMed Central PMCID: PMC1397054.
3. **Conter RL, Longmire WP Jr.** Recurrent hepatic hemangiomas. Possible association with estrogen therapy. *Ann Surg.* 1988 Feb;207(2):115-9. PubMed PMID: 2829759; PubMed Central PMCID: PMC1493383.
4. **Sherlock S.** Hepatic adenomas and oral contraceptives. *Gut.* 1975 Sep;16(9):753-6. PubMed PMID: 1193429; PubMed Central PMCID: PMC1413112.
5. **Klatskin G.** Hepatic tumors: possible relationship to use of oral contraceptives. *Gastroenterology.* 1977 Aug;73(2):386-94. Review. PubMed PMID: 194813.
6. **Baum JK, Bookstein JJ, Holtz F, Klein EW.** Possible association between benign hepatomas and oral contraceptives. *Lancet.* 1973 Oct 27;2(7835):926-9. PubMed PMID: 4126557.

7. **Rooks JB, Ory HW, Ishak KG, Strauss LT, Greenspan JR, Hill AP, Tyler CW Jr.** Epidemiology of hepatocellular adenoma. The role of oral contraceptive use. *JAMA*. 1979 Aug 17;242(7):644-8. PubMed PMID: 221698.
8. **Foster JH, Berman MM.** The malignant transformation of liver cell adenomas. *Arch Surg*. 1994 Jul;129(7):712-7. Review. PubMed PMID: 7517661.

*Submitted October 18, 2016*