FOCAL NODULAR HYPERPLASIA OF THE LIVER: CASE REPORT

J. Michael Uszler and Leonard A. Swanson

Harbor General Hospital, Torrance, and Hospital of the Good Samaritan Medical Center, Los Angeles, California

An abnormal ^{99m}Tc-sulfur colloid scan was observed in a patient with focal nodular hyperplasia of the liver.

Focal nodular hyperplasia (FNH) is a benign tumor of the liver. Several cases have been reported that presented as an acute intra-abdominal hemorrhagic state and were thought to be related to oral contraceptive usage.

This is a report of an unusual liver scan appearance representing a large lesion of FNH which presented incidentally in a person with prior oral contraceptive usage.

CASE REPORT

A 27-year-old white woman presented with chief complaints of pelvic pain and infertility. She underwent laparoscopy followed by a laparotomy through a Pfannenstiel incision. During exploration, an unsuspected liver mass was palpated but not visualized. Lysis of adhesions and fulguration of pelvic endometriosis were performed. Four days postoperatively liver function tests were normal except for serum alkaline phosphatase of 21.0 (normal, 4.0–17.0) and SGOT 80 (normal, 10–40). There was no history of hepatitis or blood transfusion.

Following recovery from her initial surgery, the patient was evaluated regarding this liver mass. A colloid liver/spleen scan (Fig. 1) demonstrated a large masslike projection below the arteroinferior margin of the liver with a "normal" amount of uptake of radioactivity. Repeat liver function tests at this time (i.e., 10 days after initial tests) were normal including the alkaline phosphatase and SGOT.

The patient subsequently underwent operative removal of the 7 × 6 × 3.5-cm mass. The histopathologic appearance in this completely excised, pedunculated, subcapsular nodule showed hyperplasia of parenchymal cells, bile ducts, and portal triads. A centrally located stellate fibrous scar was present. Some focal areas of fibrous scarring were present, associated with lymphocytic infiltration. Grossly small focal areas of hemorrhage were described. The appearance was consistent with focal nodular hyperplasia of the liver.

DISCUSSION

Benign tumors of the liver are relatively uncommon (*1,2*). However those associated with acute intra-abdominal hemorrhage are being recognized more frequently (*3*). There has been recent literature discussion concerning the different types and their clinical presentations, along with their radionuclide scan, angiographic (*4,5*), and histopathologic appearances (*1,4*).

FNH is one such type of benign tumor. Its clinical presentation is most commonly seen in young women and can appear clinically as an incidental finding

Received Jan. 27, 1975; revision accepted April 11, 1975.

For reprints contact: J. Michael Uszler, Nuclear Medicine, Harbor General Hospital, Torrance, Calif. 90509.

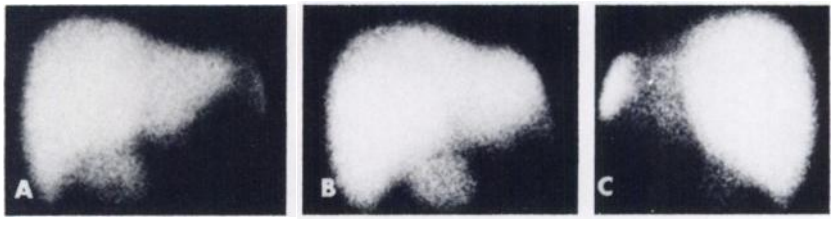

FIG. 1. Technetium-99m-sulfur colloid liver scintiphotos in (A) anterior, (B) 45-deg right anterior oblique, and (C) posterior projections. Lateral views gave poor delineation of lesion.

(*2*) or as an acute intra-abdominal hemorrhage (*6*). The lesions are more frequently solitary and located in the right lobe. There is apparently no available commentary regarding specific serum liver function test values in FNH. One general statement relates that "liver function tests are normal," "so the tumors are hard to find without liver scans or arteriograms" (*3*).

The areas of FNH found incidentally have been less than 4 cm in diameter, have increased vascularity without neovascularity on angiography (*4*), and are not considered to be related to oral contraceptive usage.

When FNH has presented as acute intra-abdominal hemorrhage, the lesions have been larger in size. Surgical specimens have shown extensive hemorrhagic areas. It is in these cases that the possible etiologic relationship to oral contraceptive usage has been suggested.

Of all the cases incidental or acute reported in these various articles, only seven cases have had a radionuclide liver scan performed preoperatively. The lesions were either small (less than 2.5 cm diam lesion in one case and three 1-cm lesions in another case) and were not visualized with a "normal" scan or were larger (3–12 cm in at least one dimension) and were seen on scans as a discrete area of diminished activity.

All the small lesions were within the liver substance as were two of the four larger lesions. The other two large lesions either were extending out on a pedicle or replaced an entire lobe.

Our case represents an interesting combination of these various factors. The area of hyperplasia was relatively large in size, yet showed an apparently "normal" amount of activity accumulation. It did not manifest the "cold" appearance of the other larger lesions either within or extending from the liver substance. The tissue grossly manifested only small focal areas of hemorrhage. It presented as an incidental finding in a patient who had used oral contraceptive medication for 3 years, but not in the 4 years prior to clinical presentation.

Whether development of FNH, either "incidental" or "acute", of the liver can be directly or indirectly causally related to oral contraceptive usage is not certain. But whatever the relationship, FNH represents a spectrum of different-sized lesions and probably of hemorrhagic tendency. Particularly in young women, FNH should be considered in the differential diagnosis of an abnormal liver scan.

REFERENCES

1. MALT RA, HERSHBERG RA, MILLER WL: Experience with benign tumors of the liver. *Surg Gynecol Obstet* 130: 285–291, 1970

2. BAUN JK, BOOKSTEIN JJ, HOLTZ F, et al: Possible association between benign hepatomas and oral contraceptives. *Lancet* 2: 926–929, 1973

3. Medical News. *JAMA* 231: 451–452, 1975

4. MCMULLEN CT, MONTGOMERY JL: Arteriographic findings of focal nodular hyperplasia of the liver and review of the literature. *Am J Roentgenol Radium Ther Nucl Med* 117: 380–387, 1973

5. MCLOUGHLIN MJ, COLAPINTO RF, GILDAY DL, et al: Focal nodular hyperplasia of the liver. Angiography and radioisotope scanning. *Radiology* 107: 257–263, 1973

6. MAYS ET, CHRISTOPHERSON WM, BARROWS GH: Focal nodular hyperplasia of the liver. Possible relationship to oral contraceptives. *Am J Clin Pathol* 61: 735–746, 1974