

: Hypoechoic Halo

1

. . .

:
: (n=16) (n=1)
17 (homogeneity)
, ,
, ,
3 mm , 3 mm
, (intratumoral)
, (extratumoral) (mixed)
: 4 cm 13.5 cm 7.3 cm , 2 ,
13 가 가 15 , 2 가 3 ,
가 3 , 가 8 , 가 7 , 가
2 15 10 (67%) , 10 3 mm (4 - 13 mm; 8.3 mm)
. 2 가 , 3
. 10 8 , 2
, 4 (24%) ,
: 가 (47%) (41%)
67% 가 (64%) (80%)
가

(inter -
lobular bile duct)
10% 88% , 14%
(1). , 가
, ,
, .
(2). ,
1992 Werneke (3, 4) ,
가 (3).

1

2001 5 3

2001 9 5

(metaplasia) (9). (4). 1992 Werneke (3, 4)

(Caroli's disease), 가 (5) 88% 14%

(9 - 12), 10% 가 가 4 mm 13 mm 8.3 mm

(collagen) (2), 가 가

(13, 14). Werneke 15 (88%) 10 (67%) 10 3 mm 10

가 (4 - 13 mm; 8.3 mm) 8 (80%) (mixed type) Werneke

(3). 가 (3) 13 11 , 1 가

가 1 가 CT MRI 가 (88%)

(16, 17). 가 (18) 가 , 가

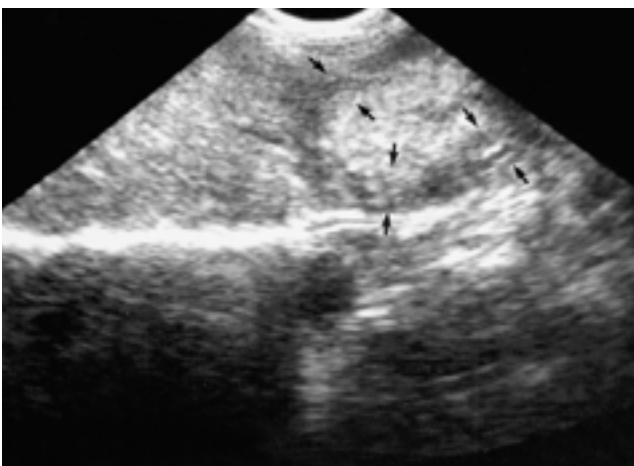


Fig. 2. A 62-year-old man having biopsy-proven peripheral cholangiocarcinoma in the left lobe of the liver. Ultrasonogram shows a 7 cm, lobulated, heterogeneous, hyperechoic mass in lateral segment of the left lobe of the liver. Thick and mixed type of halo was seen at the peripheral portion of the mass.



Fig. 3. A 67-year-old man having biopsy-proven peripheral cholangiocarcinoma in the right lobe of the liver. Ultrasonogram shows a 5.5 cm, lobulated, slightly heterogeneous, isoechoic-centered mass in the right lobe of the liver. Thick and intratumoral type of halo was seen at the peripheral portion of the mass. This patient also had common bile duct stones and biliary tree dilatation.

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Peripheral Cholangiocarcinoma: Radiologic Significance of Hypoechoic Halo Sign on Sonography¹

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Purpose: To determine the prevalence and characteristics of the hypoechoic halo sign in peripheral cholangiocarcinoma.

Materials and Methods: Seventeen sonograms of 17 patients with peripheral cholangiocarcinoma histologically proven by either percutaneous needle biopsy (n = 16) or surgical biopsy (n = 1) were retrospectively reviewed. The size, margin, homogeneity and internal echogenicity of the masses as well as their peritumoral ductal dilatation and intratumoral calcification were ascertained, and the presence of a hypoechoic halo, and if present, its thickness and type, were also determined. We arbitrarily defined a 'thin' and 'thick' halo respectively, as one with a thickness less than of less than 3 mm, and 3 mm or more, and classified halos as 'intratumoral', 'extratumoral', or 'mixed'.

Results: Tumor diameter ranged from 4 to 13.5 (mean, 7.3) cm, and the margin was well-defined in 15 cases (smooth: n = 2; lobulated: n = 13) and irregular in two. Echogenicity was slightly heterogeneous in 11 cases, severely heterogeneous in three, and homogeneous in three, while the central portion was hyperechoic in eight cases, isoechoic in seven, and hypoechoic in only two. A hypoechoic halo was detected in 10 of 15 tumors (67%) with isoechoic centers. In evaluating the halo, two cases in which the mass was hypoechoic were excluded. All ten hypoechoic halos were at least 3 (range, 4 - 13; mean, 8.3) mm thick; in two cases the presence of a halo was equivocal, and in three there was no halo. Eight of ten halos were the mixed type, two were intratumoral, and none were extratumoral. Peritumoral ductal dilatation was seen in four cases (24%), but no internal calcification was observed.

Conclusion: US showed that the margins of peripheral cholangiocarcinomas were mostly well-defined and smooth (12%) or lobulated (76%), and that masses were mainly heterogeneous (64%). A hypoechoic halo, which in all cases was thick and in 80% of cases was mixed, was noted in 67% of tumors with a hyper (47%) or isoechoic (41%) center. A halo of this kind may be useful in isoechoic mass detection and also in the differentiation of hyperechoic peripheral cholangiocarcinoma from hepatic hemangioma, the most common hyperechoic benign tumor.

Index words : Liver, US
Liver, neoplasms
Bile ducts, neoplasms

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