

: Portal vein, US
 Portal vein, thrombosis
 Veins, umbilical

[1-3].

, , , 가 ,
 가 가 [4],

1% 13%

[1, 2].

가

1998 12 1999 7
 54
 5,400 gm 2,058 gm 1,100 gm
 40 33.6
 1,500 gm 5 Fr.
 6 Fr.
 가

가 (asphyxia),
 가 (n=54)
 I (n=41),
 II (n=9),
 III (n=4) (Fig. 1).
 HDI 3000 (Advanced Technology Laboratories, Bothell, WA, U.S.A.) 5 - 10 MHz
 3 34 ()
 15)
 6 15 32 ()
 3)

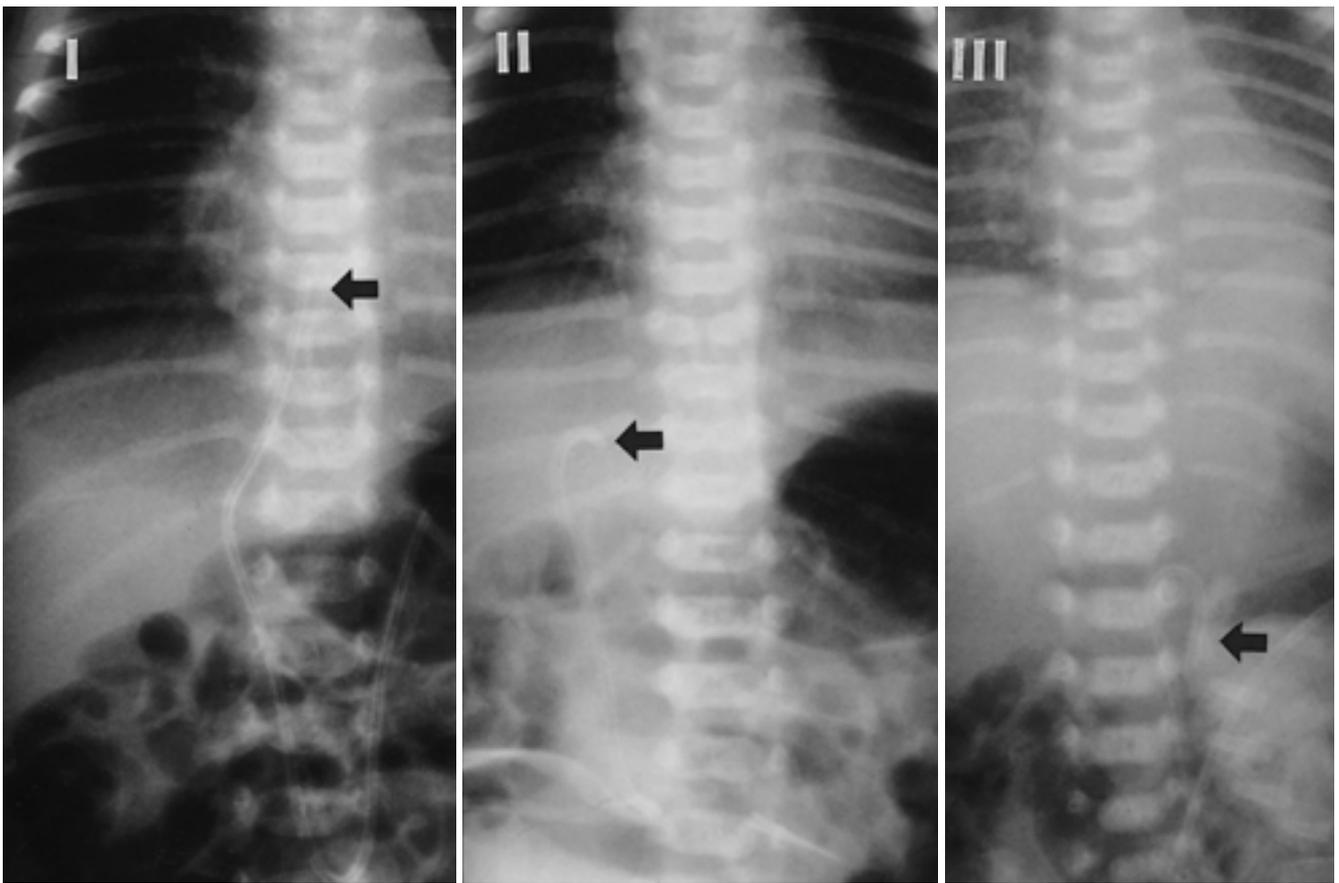


Fig. 1. The location of catheter tip.
A. Group I : The catheter tip (arrow) is located above the diaphragm. **B.** Group II : The catheter tip (arrow) is located between the diaphragm and the liver. **C.** Group III : The catheter tip (arrow) is located below the liver.

[5-8].

54 7 (13%)

가
[9].

4.8

4.8 (2 -11)

가 silastic polyvinyl chloride

4.7 (3 -6)

I 4.8 , II

, end hole side hole , 가

4.6 , III 5.0

7

[10, 11],

I 2 , II 1

가 가 , III 1

, 가 , ,

I 5%(2/41)

II III

가 Schwartz [1] 1%

, Guimaraes

45%(4/9), 25%(1/4)

[2] 12.7%

12.9%

7

6 (86%)

Guimaraes

가

(Fig. 2).

1

, ,

가

가

(Fig. 3).

가

가

가

15 32 (3)

6

Schwartz

4

, 1

(Fig. 2).

3 Fr.

5 Fr. 6 Fr.

,

22

(Fig. 3).

(Dobule or triple lumen)

가

가 [12, 13],

가

4.8 ,

가 4.7



Fig. 2. A localized thrombus within the left portal vein in a 5-days-old infant in group I.

A. Transverse US image of the left portal vein shows echogenic, nonocclusive thrombus (arrow) within the umbilical portion. **B.** Serial follow-up sonogram after 17 days demonstrates complete resolution of portal venous thrombus.

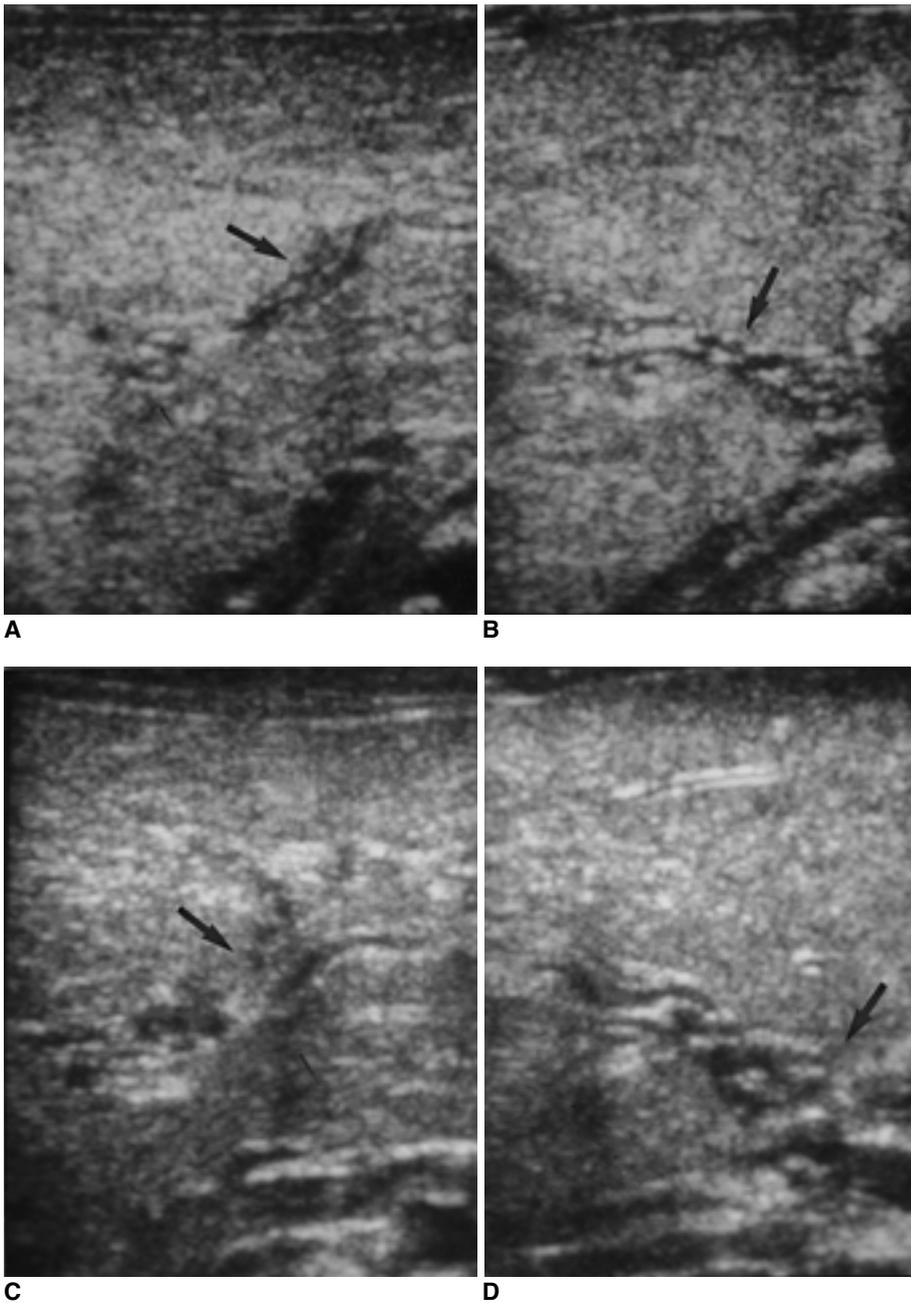


Fig. 3. Obstructive thromboses within the entire portal veins in an 1-month-old infant in group III. Transverse US images show completely obstructed left portal vein(A) and main portal vein(B) with echogenic thromboses. Serial follow-up sonogram after 22 days depicts completely thrombosed left portal vein(C) and main portal vein(D). Multiple serpiginous vascular channels around the thrombosed portal veins are formed.

가 , I, II, III 4.8 , 4.6 , 5.0 0.5 cm 1.0 cm (shaft) 가 [9]. (thrombogenicity)가 가 [4]. 가 I , [2]. (ductus venosus) , II , III 가 , .

:
 ,
 [14 - 16].
 [14], 90%
 [17].
 [18, 19].
 3 [14],
 가,
 , 1 - 12 .
 (86%)
 가
 가 가 . 6
 , .
 ,
 1 ,
 22 ,
 가 [6, 20, 21]
 ,
 가 ,
 color
 Doppler 가 [22]

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= Abstract =

The Value of Ultrasonography in the Diagnosis of Portal Vein Thrombosis by Umbilical Venous Catheterization

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PURPOSE : To evaluate the usefulness of ultrasonography for diagnosis of portal vein thrombosis (PVT) associated with the umbilical venous catheterization (UVC).

MATERIALS and METHODS : We reviewed the abnormal ultrasonography of 54 patients with UVC. We observed echogenic thrombus in the portal vein by ultrasonography which has a 5-10 MHz linear transducer. We evaluated the frequency of PVT, the relationship between PVT and duration of UVC, and the location of catheter tip (Group I (n=41): above the diaphragm, Group II (n=9): between the diaphragm and the liver, Group III (n=4): below the liver), the location of thrombus on US, and the change of PVT on the follow-up ultrasonography.

RESULTS : PVT was identified in the 7 neonates (13%) among the 54 neonates with UVC. The frequency of PVT was 5% on group I, 45% on group II and 25% on group III. The 6 cases among the 7 cases (86%) of PVT were localized to the umbilical portion of the left portal vein, and there were completely resolved (n=4) or regressed (n=1) on the follow-up ultrasonography (n=5). Remaining one case of PVT was located in the right, left, and main portal veins with collateral formation, and cavernous transformation occurred on the follow-up.

CONCLUSION : Most PVTs by UVC are localized to the umbilical portion of left portal vein. Ultrasonography is a useful modality to diagnose PVT by UVC.

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