

1

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: 2001 10 2002 6

19 20

13

, 6 1 - 11 (4.7) . 3

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118 (18 - 274)

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1982 Niederhuber

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(1).

가 (2).

2001 10 2002 6 19

20

가 13

가 6 , 1 - 11 (4.7) .

(3, 4).

가

13 , 1 , 1 , 1 , 1 .

가

>50,000/mm³,
<17

8

2002 ()

2003 1 3 2003 7 21

11 (, ,)

1.0 mg/kg 4 - 6 mg/kg/hr 5 - 7
 . 3 8 (, 2 .
 ,) (, ,)
 . 1.2 mg/kg 1/3
 . 0.1 mg/kg
 . (sedation) 가 , 19 20 . 1
 , , 18 - 274 (118) . 2
 (BABY - 1 30
 PORT. B.BRAUN. France)
 , 1.5 mm, 0.8 mm
 (Fig. 1). 가 , , . 1 4
 . 1%
 21G
 (Micropuncture system; Cook, Bloomington, U.S.A.)
 1 (Fig.
 2A). 1/3 2 - 3 cm 3 cm
 .
 가
 (Fig. 2B). 1970 Broviac Hickman
 ,
 (5, 6).
 가
 10 - 56% (7, 8). Mitchell
 (Fig. 2C). (9)
 3.0 (silk) (Fig.
 2D). (bevelled needle)
 (100 IU/ml) 5 ml 가
 (Fig. 2E). 30 (10) “ The Children’s Cancer Study Group ” Wiener
 (multicenter study) ‘

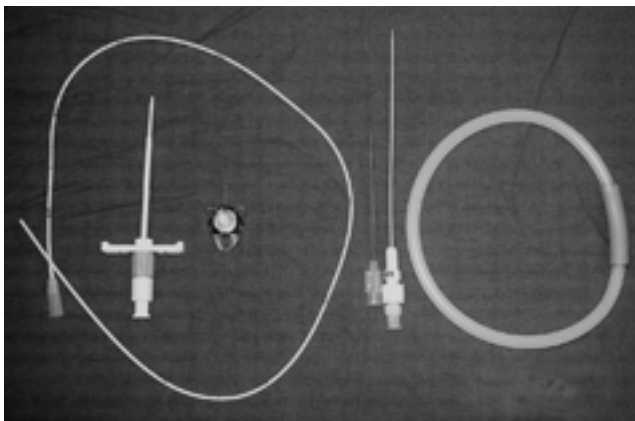


Fig. 1. Photograph shows low-profile implantable chest port, 4.5 F catheter and micropuncture set used for chest port placement in infants and younger children.

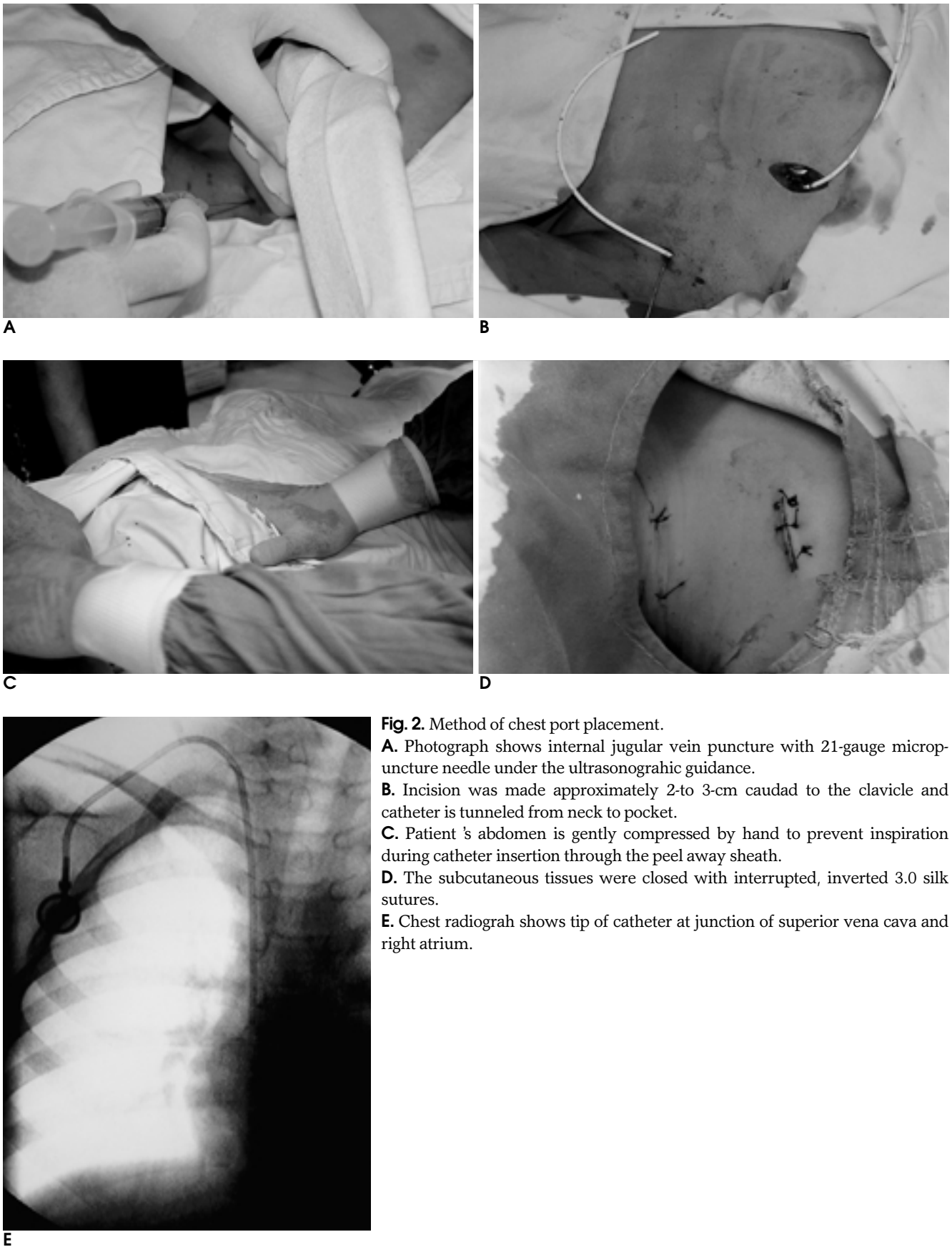


Fig. 2. Method of chest port placement.

A. Photograph shows internal jugular vein puncture with 21-gauge micropuncture needle under the ultrasonographic guidance.

B. Incision was made approximately 2-to 3-cm caudad to the clavicle and catheter is tunneled from neck to pocket.

C. Patient's abdomen is gently compressed by hand to prevent inspiration during catheter insertion through the peel away sheath.

D. The subcutaneous tissues were closed with interrupted, inverted 3.0 silk sutures.

E. Chest radiograph shows tip of catheter at junction of superior vena cava and right atrium.

(conscious sedation), (deep sedation),
 (general anesthesia) 10 - 30%
 (ver - 50 - 70%
 bal response) 가 (12). 3 가 가 (18, 19).
 . 3 가 2
 . (18). (25 -
 50%), (25%), (5 - 10%)
 2/3 (20). 가
 , 가,
 (13). (21, 22).
 1
 (21,
 22). 1 1
 , 가 ,
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 (14). , , ,
 ,
 21G
 가
 . Morello (15)
 가 가
 가 가
 (15, 16).
 100%
 (16). 가
 Valsalva
 (17),
 가
 20cc

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Radiologic Placement of Implantable Chest Ports in Pediatric Patients Under Sedation¹

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Purpose: To evaluate the safety and efficacy of the radiologic placement of implantable chest ports under intravenous sedation in pediatric patients with malignancy.

Materials and Methods: Between October 2001 and June 2002, 20 chest ports were placed in 19 pediatric patients [13 boys and six girls aged 1 - 11 (mean, 4.7) years] for the purpose of long-term chemotherapy. In three patients, tunneled central venous catheters had been removed because of catheter extraction, infection, and tearing. Under intravenous sedation, the right internal jugular vein was used for access in 19 cases, and the left internal jugular vein in one. Venipuncture was performed using a micropuncture needle with real-time ultrasound guidance. A port chamber was created at the infraclavicular fossa, and to prevent catheter kinking, a smooth-angled tunnel was created between the venipuncture site and the subcutaneous pocket. The catheter tip was positioned under fluoroscopy at the junction of the superior vena cava and right atrium. We observed technical success, complications arose during and after the procedure, and duration of catheter use.

Results: Implantation of the port system was successful in all cases, though slight hematoma, treated with manual compression, occurred at a chamber pocket in one case. In addition, the port system was removed from one patient because of wound infection leading to dehiscence and catheter malpositioning. A new port system was implanted through the left internal jugular vein. The median period during which catheter use was followed up was 118 (range, 18 - 274) days.

Conclusion: For long-term chemotherapy in pediatric patients with malignancy, radiologic placement of an implantable chest port under intravenous sedation shows a high technical success rate, with few complications. This method may thus be used instead of surgical port placement.

Index words : Catheters and catheterization, child

Catheters and catheterization, technology

Catheters and catheterization, complications

Catheters and catheterization, central venous access

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