

1



:
 : 2006 1 2007 6
 325 108
 (n=89) (n=19) 9.6 F
 :
 (187, 21,994) . 85 2 -461
 가 7 (6%)
 1
 2 가 가 3 (3%,
 0.14/1000 Catheter Day), 2 (2%, 0.09/1000 Catheter days)가

가
 가
 가 (1, 2). (3-5).
 가 ,

2006 1 2007 6
 325
 108 . 32-80 (47
) 가 19 , 가 89 .
 87 , 8 , 5 , 3 ,
 5 . 108 105

1
 2
 3

3 가 (n=73), (n=35) 가 24

가 89 , 가 19 가 (Demerol ,) 50 mg

, 2% (lidocaine HCl,) 20 cc 가 38.3

1,000 Catheter day (peel away sheath)

22 Gauge 19 14 5 (probe) 2 -461 (mean: 197 , Total Catheter Days: 21,994) (287) (186) 85 가 7 (6%, 0.32/1,000 Catheter day)가 가

F 0.018 inch , 5 가 9.6F (Bard Inc, Salt Lake City - (Air embolization) USA Braun Medical, Boulogne France) 가 (n=94) 가 1 (n=14) 5 cm 가 가 가 2 (2%)가 2

(Vicryl , Johnson & Johnson, Netherland) 가 3 (3%, 0.14/1000 Catheter Day)가 가 2 , 가 1 가 2 1 3 (non - coring needle) (Heparin sodium 100 IU/mL, ,) 2 (2%, 0.09/1000 Catheter days) 1 2

1 .

가
가 1 가

가

14

가

가

가

가

가

(Fig. 1).

2

가

가

가

가

가

가

(6, 7).

가

McCown (8)

가

가

가

15 F

가

(3).

가

9.6 F

가

가

가

(sternocle -

idomastoid muscle)

가

가 가

(Fig. 1C, D).

1 cm

가

22 G

가

가

가

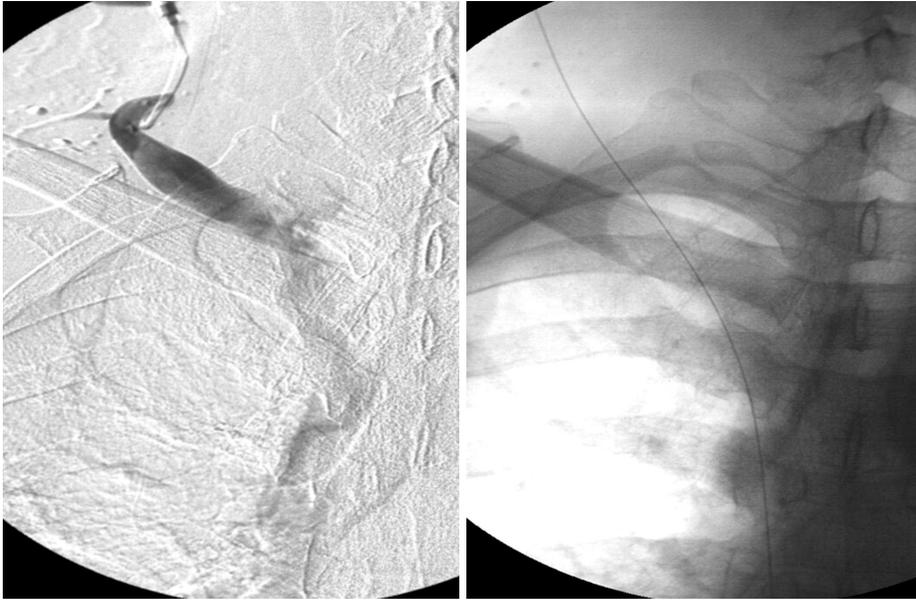


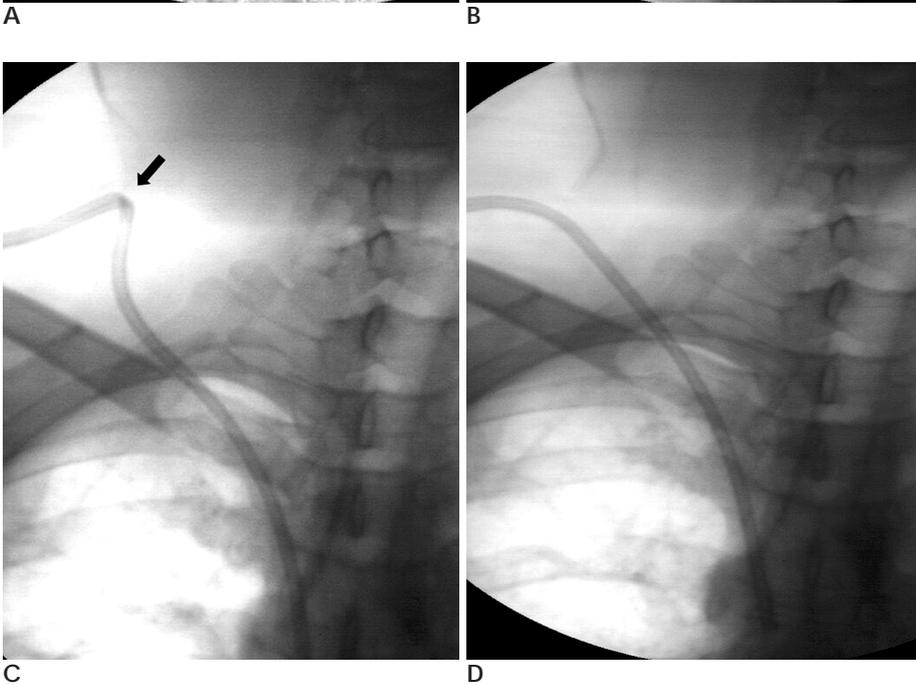
Fig. 1. Catheterization through the right external jugular vein

A. Venography shows the insertion of the right external jugular vein into the subclavian vein.

B. Passage of a guide wire straightens the angle of insertion of the right external jugular vein into the superior vena cava.

C. Chest radiography performed after catheter insertion shows kinking of catheter at the puncture site (arrow).

D. Kinking of the catheter is disappeared after pulling of the catheter.



9, 10).
 McCown (8)
 22

가 가
 (7, Alain (9)
 23% (3/13)
 가

(4).
 3 11.7%가
 24%
 가
 가

가

67 134

가 (9)

가

2

2

가

가

가

(9, 11, 12).

가

가

가

(fibrin sheath)

가

(186)가 (287)

가

가

Vesely (13) 0.13% (15/11583)

100%

가

(Valsalva's maneuver)

(14).

가 2 (2%, 0.09/1000 catheter days)

1. Reeves AR, Seshadri R, Trerotola SO. Recent trends in central venous catheter placement: a comparison of interventional radiology with other specialties. *J Vasc Interv Radiol* 2001;12:1211-1214
2. 2002;47:467-472
3. Forauer AR, Brenner B, Haddad LF, Bocchini TP. Placement of hemodialysis catheters through dilated external jugular and collateral veins in patients with internal jugular vein occlusions. *AJR Am J Reontgenol* 2000;174:361-362
4. Cho SK, Shin SW, Do YS, Park KB, Choo SW, Choo IW. Use of the Right External Jugular Vein as the Preferred Access Site When the Right Internal Jugular Vein Is Not Usable. *J Vasc Interv Radiol* 2006;17:823-829
5. Povoski SP External jugular vein cutdown approach for chronic indwelling central venous access in cancer patients: a potentially useful alternative. *World J Surg Oncol* 2004;2:7
6. Macdonald S, Watt AJ, McNally D, Edwards RD, Moss JG. Comparison of technical success and outcome of tunneled catheters inserted via the jugular and subclavian approaches. *J Vasc Interv Radiol* 2000;11:225-231
7. Trerotola SO, Kuhn-Fulton J, Johnson MS, Shah H, Ambrosius WT, Kneebone PH. Tunneled infusion catheters: increased incidence of symptomatic venous thrombosis after subclavian versus internal jugular venous access. *Radiology* 2000;217:89-93
8. McCowan TC, Ferris EJ, Carver DK, Harshfield DL. Use of external jugular vein as a route for percutaneous inferior vena caval filter placement. *Radiology* 1990;176:527-530
9. Alain L, Olivier C, Philippe H, Damien G, Frederic P, Vincent B, et al. Catheter-related Upper Extremity Deep Venous thrombosis in

- Cancer Patients: A Prospective Study Based on Doppler US. *Radiology* 2001;220:655-660
10. Funaki B, Szymiski GX, Hackworth CA, Rosenblum JD, Burke R, Chang T, et al. Radiologic placement of subcutaneous infusion chest ports for long-term central venous access. *AJR Am J Reontgenol* 1997;169:1431-1434
 11. Trerotola SO. You are asked to place a dialysis access catheter in a patient. What is your preferred access site, and why? *J Vasc Interv Radiol* 1997;8:75-76
 12. Moss AH, McLaughlin MM, Lempert KD, Holly JL. Use of a silicone catheter with a Dacron cuff for dialysis shortterm vascular access. *Am J Kidney Dis* 1988;12:492-498
 13. Vesely TM. Air Embolism during Insertion of Central Venous Catheters. *J Vasc Interv Radiol* 2001;12:1291-1295
 14. Groeger JS, Lucas AB, Thaler HT, Friedlander-Klar H, Brown AE, Kiehn TE, et al. Infectious morbidity associated with long-term use of venous access devices in patients with cancer. *Ann Intern Med* 1993;119:1168-1174

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The placement of an Implantable Chemoport via the External Jugular Vein as a Primary Route¹

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Purpose: To evaluate the usefulness and safety of the placement of an implantable chemoport via external jugular vein as a primary route for chemotherapy.

Materials and Methods: Between January 2006 and June 2007, a total of 108 implantable chemoports were placed on 325 patients for chemotherapy via the external jugular vein as a primary route. We placed a 9.6 F single lumen chemoport using a surgical procedure ($n=89$) and an interventional procedure ($n=19$), and evaluated the duration of catheterization days and treatment complications.

Results: An implantable chemoport was successfully installed in all cases. Furthermore, the duration of catheterization ranged from 2 to 461 days (mean: 187 days, total catheter days: 21,994). In addition, a total of 85 chemoports were removed due to complications ($n=7$) and termination of chemotherapy ($n=78$). A transient pulmonary air embolism occurring during a procedure was observed in one case. No pneumothorax or catheter malpositions were observed in the study subjects. Two chemoports were removed two days after implantation due to persistent tachycardia. In addition, five late complications occurred, which resulted in catheter occlusion (3 cases) (3%, 0.14/1000 catheter day) and infection in (2 cases) (2%, 0.09/1000 Catheter days). Lastly, no symptoms were attributed to a central vein thrombosis.

Conclusion: The results of this study suggest that the implantation of chemoports via the external jugular vein is a safe procedure. Moreover, the selection of the external jugular vein as a primary route is useful in determining chemoport insertion locations

Index words : Catheterization, central venous
Catheters, indwelling
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