

Bird's Nest

1

2

3

3

3

: Bird's Nest

: 1991 8 1997 8 6

Bird's Nest 51

17 , 17 , 가

11 , 가 3 ,

3

29 ,

19 , 3 1 6 (10)

: 44 , 7 가

7

(13.7%) 3 (5.9%)

가 ,

(3.9%) , 17 가 2

: Bird's Nest

가

가 가

(4,5, 6). Greenfield 5%

4%

(7,8). 1984 Kimray-Greenfield filter

(9),

(1).

가 (1,2). 1960

(10,11) ,

Bird's Nest (Cook, Bloomington, USA)

(3). 1967

Mobin-Uddin filter(Elgiloy Company, Elgin, IL)

, 60-70%

¹
가
³

1998 8 25

1998 12 23

1991 8 1997 8 6
51

가 27 가 24 , 26

: Bird's Nest

85 (59.1) .
가 17 , 17 , 3mm (12)
가 11 ,
가 3 , (anchoring
3 (Table 1). hook struts) 가
14 , 9
, 8 , 7 (Table 2).
, 33 1cm
, 17 , 9 가 (12).
, 10 (maximum venous outflow test) 1 6
, 2 10 가 16
. 19 3 (31.4%) 가 17 (33.3%) , 18 8
, 5 1 , 10 1
. 가 가
29 ,
19 , 3 Bird's Nest
. 12 , 10 , 19 ,

Table.1 Indications for IVC Filter Placement

Indication	No. of Patients
Contraindication to anticoagulation	17(33.3%)
Prophylactic	17(33.3%)
Failure of anticoagulation	11(21.6%)
Complication of anticoagulation	3 (5.9%)
Massive PE with floating thrombus	3 (5.9%)

PE : pulmonary embolization, IVC : inferior vena cava

Table.2 Underlying Diseases of 51 Patients with IVC Filters

Diseases	No. of patients
Malignant tumor	14
Orthopedic disease	9
Neurologic disease	9
General surgery	8
Pulmonary disease	7
Cardiac disease	2
Others	2
Total	51

IVC : inferior vena cava



Fig.1 Bird's Nest filter placement at the infrarenal inferior vena cava
A. Inferior venacavogram shows the Bird's Nest filter located at infrarenal portion of the IVC
B. Magnified film shows compact wire configuration of the Bird's Nest filter at L3-4.

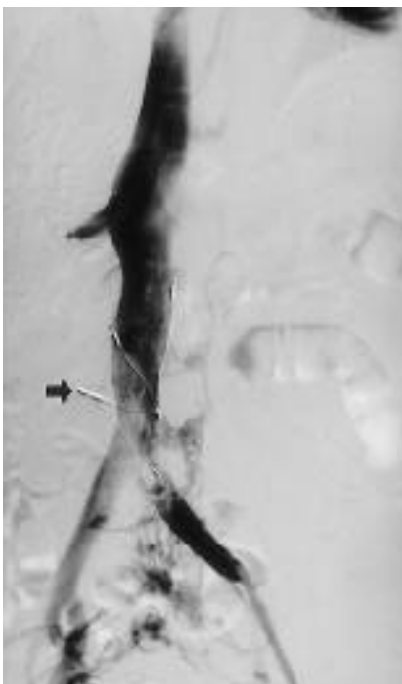
4 , 5 , 3 가 ,
 , 1 . 1 .
 가 가 16 8 , 23
 7 , 6 , (12 , 10 ,
 가 2 , 가 3 1)
 16 가
 가 11 ,
 31 , ,
 3 , 가
 1 , 1

44 (Fig. 1), 7

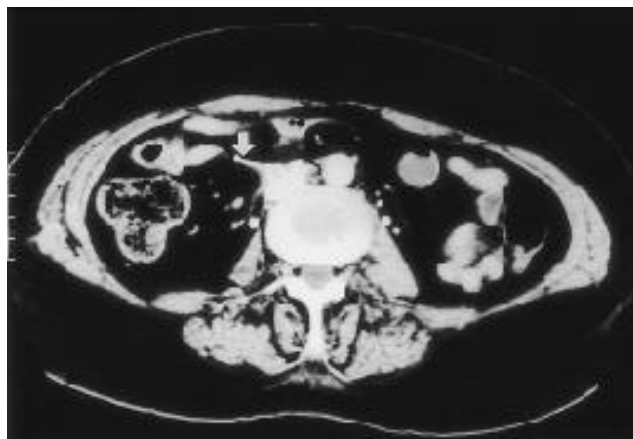
(Fig. 2) 3
 (5.9%), (Fig. 3) 7 (13.7%)
 가 ,
 가
 2 (3.9%)
 1
 19
 10 , 4
 , 3
 45 (84.6%) , 6 (11.5%)



Fig. 3. Prolapse of filter wire
 Magnified film shows prolapse of filter wires (arrow) below anchoring struts.



A



B

Fig. 2. Penetration of the IVC due to filter malposition
 A. Inferior vena cavogram shows inferior strut of the Bird's Nest filter located at outside of the vessel lumen (arrow).
 B. CT scan shows inferior strut of the Bird's Nest filter located at outside of the IVC (arrow), but there is no contrast leakage and surrounding hematoma.

: Bird's Nest

가 가

가 (24,25,26).

18%,

12% (13).

50% (3). 26% 가

가

(24,25,26).

가

(1), 1960

(25).

(3). 1984 Kimray-Greenfield filter (Medi-tech, Boston scientific.,Watertown, USA) (9),

가

가

가 , 가 ,

(17,18).

Roehm (12)

Bird's Nest

가

97%

가

3%

3.9%

, 가 가 (14,15,16).

가 가

17

가

3 (5.9%),

Titanium Greenfield modified hook design filter(Medi-tech, Boston scientific.,Watertown, USA), Vena Tech-LGM filter(B. Braun Vena-Tech, Evanston. USA), Simon-Nitinol filter(Nitinol Medical Technologies, Woburn, USA), Bird's Nest filter(Cook, Bloomington, USA), (17-22).

7 (13.7%)

가

(19).

3

가

1982

Bird's Nest

8%

1986

12F

가 가

가

7cm

가

(19,23).

4

(strut wire)

가

(filter wire)

가

가

(12,23).

가 가

30 mm

Bird's Nest

(spot radiography)

40 mm

가 (20).

. Bird's Nest

(16).

23

가 가

가

가

가

가

가

가

Bird & Nest

가

가

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Percutaneous Placement of Bird's Nest Inferior Vena Cava Filter

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Purpose : To describe clinical experiences of the use of Bird's Nest inferior vena cava(IVC) filter.

Materials and Methods : Between August 1991 and August 1997, IVC filter was percutaneously inserted in 51 patients with pulmonary embolism(PE) and deep vein thrombosis of the lower extremities. Indications for the placement of this filter were contraindication to anticoagulation in 17 patients, prophylaxis of PE in 17, failed anticoagulation in 11, massive PE with residual floating thrombus in three and complications involving anticoagulation in 3. In order to delineate the location of renal vein and extension of deep vein thrombosis into the IVC, all patients underwent inferior vena cavography before filter placement. Thirty filters were inserted through the right femoral vein, 19 through the right internal jugular vein and three through the left femoral vein. The patients involved were followed up for periods ranging from one week to six years (mean, 10 months).

Results : A Bird's Nest IVC filter was placed in the infrarenal IVC in 44 patients and in the suprarenal IVC in 7. Certain complications ensued. IVC penetration occurred in three patients(5.9%), and in seven(1.37%) the filter wire prolapsed. Except for transient pain, however, there were no serious IVC penetration-related complications and no evidence of recurrence of PE in the cases involving prolapse of the filter wire. During follow up, clinically suspected recurrent PE was noted in two patients(3.9%), but there was no evidence of newly developed occlusion of the IVC.

Conclusion : In patients who underwent follow up, Bird's Nest IVC filter effectively prevented the development and recurrence of PE, and there were no complications. To prevent penetration of the IVC and prolapse of the filter, however, technical skill was needed.

Index words : Venae cavae, filters

Venae cavae, interventional procedure

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