

CT : 1

. 2 . 2

51 :
 Kock (Pouch) 6 Bricker 43 ,
 가
 51
 3
 가
 : Bricker 43
 가
 Kock 6 가
 . 51
 19 (37%) 33 31
 , 2
 가
 (n=8) 가 (n=23)
 , 2 가
 : 가
 가
 가
 가
 가 (1-3).
 . 1899 Mikulicz가
 CT) 가 가
 1950 Bricker 가
 Kock , Camey , Indiana , Mainz 가
 CT

1
 2
 1998 7 28 1999 4 2

CT Kock (Pouch)

6 CT 가

1987 4 1997 9 10 51 58

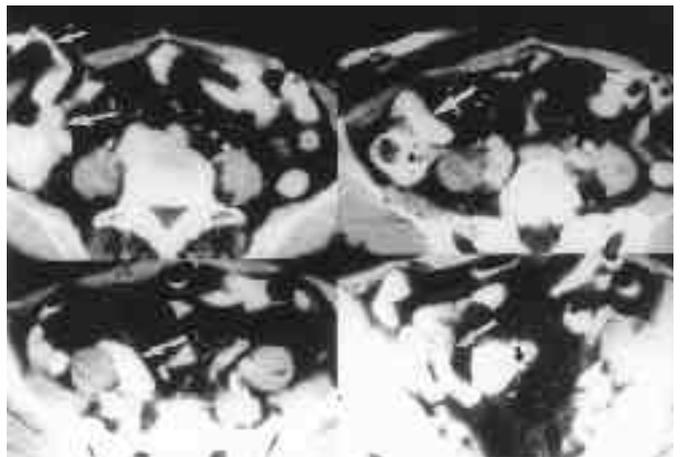
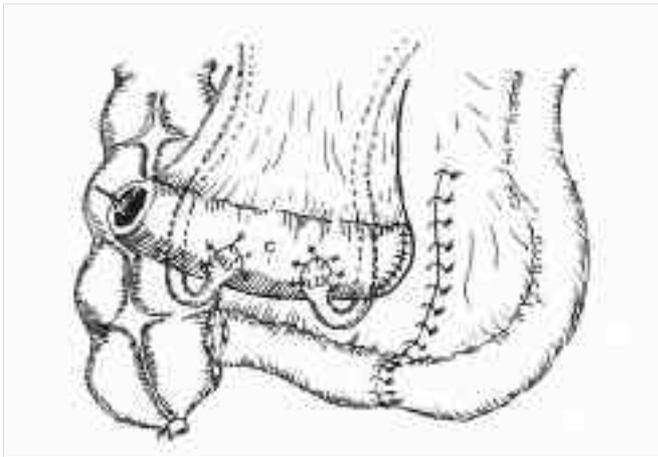
41-73 가 45 , 가 6 49 2

43 Bricker 8 3

Kock (Pouch) , 3 Kock Mainz , Indiana (or-thotopic urethrostomy) , 1

CT 가 5 , 가 11 , 가 23 , 가 10 , 가 2 2 104 21 CT 가 19 (37%) 33 31 , 2 2.1-4.2cm(3.4cm) 가 (n=8)(Fig. 3) 가 (n=23) , 2 가 (Fig. 4)

CT Picker 1200X(Picker International, Highland, U.S.A.) SCT-5000T(Shimadzu Coporation, Kyoto, Japan) , Iopromide(Ultravist 300, Shering AG, Berlin, Germany) 150ml 10mm 2.5 1 3 43



A. Schematic drawing of Bricker conduit. The conduit is constructed with a segment of ileum approximately 15-20 cm proximal to the ileocecal valve. Ureters are implanted into ileal conduit. RU : right ureter, LU : left ureter, C : ileal conduit, arrow : cutaneous stoma.

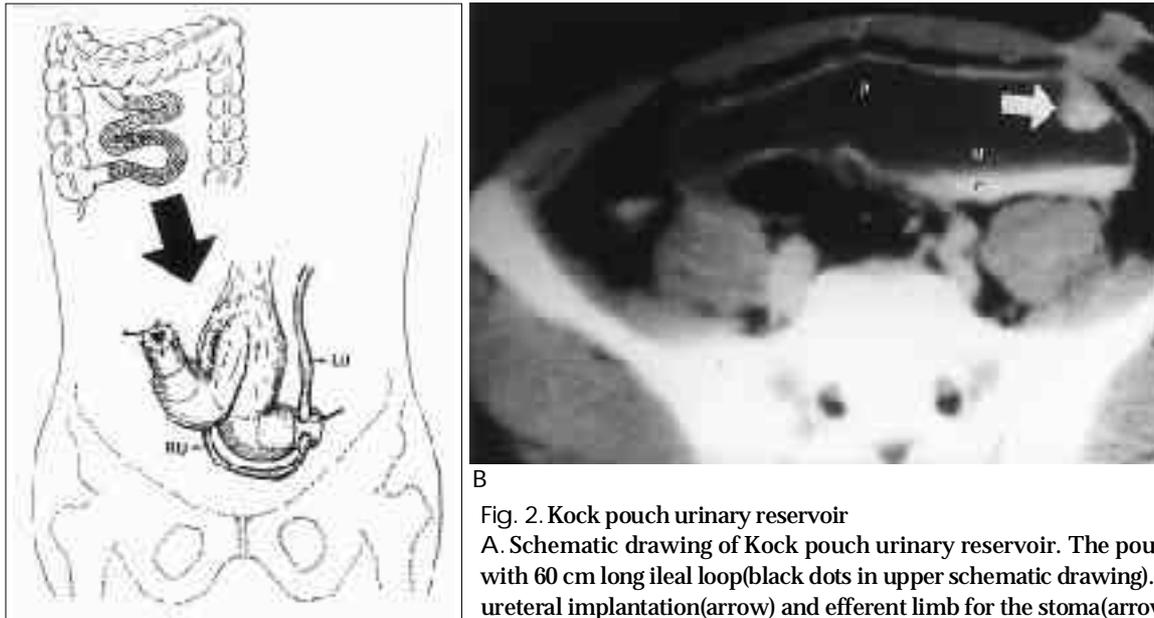
B. Normal postoperative CT findings of Bricker procedure
 Postcontrast CT scan shows ileal conduit in RLQ(white arrow) and ureter inserting into the conduit(black arrow). The conduit can be traced to the stoma in the abdominal wall(small white arrow).

(Table 1).

Table 1. Post-operative Soft Tissue Density Lesions in Surgical Bed

Shape	Number	Size on follow up	Comment
Triangular	31/33	Unchanged(23/31) Decreased(8/31)	Post-OP fibrosis or granulation tissue
Irregular	2/33	Increase(2/2)	Cancer recurrence

(4).

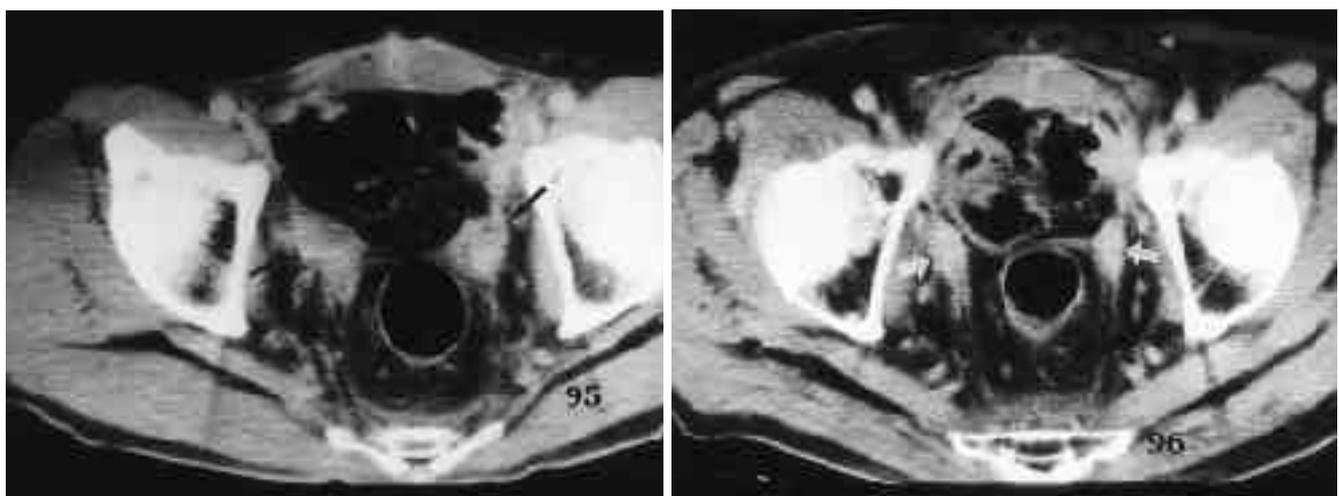


B

Fig. 2. Kock pouch urinary reservoir

A. Schematic drawing of Kock pouch urinary reservoir. The pouch is constructed with 60 cm long ileal loop(black dots in upper schematic drawing). Afferent limb for ureteral implantation(arrow) and efferent limb for the stoma(arrow head) are intussuscepted into the ileal pouch. P: Kock pouch, RU: right ureter, LU: left ureter.

A
B. Normal postoperative CT findings of Kock procedure Postcontrast CT scan shows ileal pouch(P) with artificial intussusception at the ileocutaneostomy site(white arrow) for continence mechanism. Layering of urine(U) and contrast(C) within the pouch is also noted.



A
B
Fig. 3. Postoperative fibrosis or granulation tissue in surgical bed after Kock procedure
A. Postcontrast CT scan reveals bilateral oval shaped soft tissue density lesions (black arrows) in the surgical bed.
B. One year follow up postcontrast CT scan shows interval decrease in size of the previously noted bilateral soft tissue lesions(white arrows).

CT Findings of Post Urinary Diversion : Normal Findings and Detection of Cancer Recurrence¹

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Purpose : To determine normal postoperative CT findings and tumor recurrence in patients who have undergone radical cystectomy and urinary diversion.

Materials and Methods : We retrospectively reviewed the postoperative CT scans of 51 patients who had undergone radical cystectomy with urinary diversion, and in analysis specially emphasised normal postoperative CT findings and recurrent cancer in the surgical bed. Among these 51 patients, 43 had undergone incontinent urinary diversion (Bricker operation), while for six, diversion had been continent (Kock procedure). Attempts were also made to characterise the CT findings of each procedure according to the location of the ileal pouch, the pattern of contrast collection within the pouch, and the morphology of the ileocutaneostomy site.

Results : Each urinary diversion procedure demonstrated characteristic postoperative CT appearances. The Bricker procedure revealed a contrast-filled ileal conduit in the right lower quadrant excreting into the ileocutaneostomy site, while the Kock procedure demonstrated layering of contrast and urine within the pouch as well as artificially intussuscepted afferent and efferent ileal loops at the anastomotic sites. Thirty-three small soft tissue density lesions in the surgical bed were seen in 19 patients (37%). Thirty one were bilateral (n= 28) or unilateral (n= 3) triangular or oval shaped soft-tissue-density lesions and two were unilateral irregular shaped lesions. Follow-up CT scans showed that all triangular or oval-shaped lesions were smaller (n= 8) or show no change in size (n= 23) ; they were thought to represent postoperative fibrosis or granulation tissue. Two cases of irregular-shaped soft-tissue-density lesions were seen on follow-up CT scans to be larger, and these were confirmed by percutaneous biopsy to be recurrent cancer.

Conclusion : It is important for the radiologist to be familiar with normal postoperative CT findings of various urinary diversion procedures as well as to recognize a relatively high incidence (37%) of small soft tissue density lesions in a surgical bed. In our study, small triangular or oval-shaped soft-tissue-density lesions in the surgical bed (especially when these were bilateral) were thought to represent postoperative fibrosis or granulation tissue, and close follow-up by means of CT scanning rather than an invasive procedure is therefore warranted.

Index words : Bladder neoplasms, CT
Ureter, abnormalities

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