

KIDNEY ALLOGRAFT OBSTRUCTION BY SURGICEL

Dragoslav Bašić¹, Ljubomir Đurašić², Bratislav Bašić³, Marica Bašić⁴, Drago Milutinović⁵, Milan Đokić⁵
and Jovan Hadži Đokić⁵

Surgicel (Johnson & Johnson Medical, New Brunswick, NJ) represents well-known surgical haemostatic material. This report presents a case of a 36-year-old female patient who had postoperative extrinsic kidney allograft obstruction secondary to Surgicel. The patient presented with fever, pain in the perigraft region and hydronephrosis. After diagnostic procedure, a reexploration along with surgical removal of Surgicel was performed. The operative outcome was excellent. *Acta Medica Medianae* 2011;50(1):51-53.

Key words: surgicel, kidney, allograft obstruction

Urology Clinic, Clinical Center Niš, Niš¹
Institute of Physical Medicine and Rehabilitation, Clinical Center of Serbia, Belgrade²
Berlin - Chemie Menarini, Belgrade³
Research Center, Clinical Center of Serbia, Belgrade⁴
Institute of Urology and Nephrology, Clinical Center of Serbia, Belgrade⁵

Contact: Dragoslav Bašić
Urology Clinic, Clinical Center Niš
Bulevar Zorana Đinđića 48, Niš
E-mail: drbasic@ptt.rs

Introduction

Surgicel (Johnson & Johnson Medical, New Brunswick, NJ) is widely accepted material used as a haemostatic, bactericidal and serous adhesion-reducing agent. It is D-glucuronic and D-glucose polymer with strong oxidation capacity (1). During the interaction with blood, its component cellulose stimulates the thrombi formation. It also reduces the postoperative surgical adhesences of the serosa surfaces (2). Despite the fact that manufacturer recommends its temporary use, it is usually left in situ regarding a high level of reabsorbtion (3).

A variety of complications caused by Surgicel have been described in the literature.

We present a case of kidney allograft ureteral obstruction secondary to Surgicel.

Case report

A 36-year-old female patient received the first living donor kidney allograft at the Institute of Urology and Nephrology of Clinical Center of Serbia in Belgrade. She was evaluated according to standard diagnostic protocol of the Institute. Standard allograft revascularization was established by end-to-end internal iliac to renal artery and

end-to-side renal to external iliac vein. Urinary tract continuity was established by Lich-Gregoir extravesical ureteroneocystostomy. Immunosuppressive therapy included triple protocol with cyclosporine, azathioprine (or MMF) and prednisolone. The patient was under permanent monitoring. During the late postoperative course (after 1st month), a few weeks after DJ stent extraction, the presence of grade II-III hydronephrosis was detected during a routine ultrasonographic examination. Along with hydronephrosis, a mild deterioration of renal function had developed. A patient had fever and pain in the region of the transplant. Immediately, a diagnostic procedure was performed, including complete blood count, coagulation screening tests, biochemical analysis, ultrasonography with CDI, plain abdominal radiography and CT scan. Since Surgicel was placed at the posterior allograft surface during the operative procedure and diagnostic investigation, all intrinsic and extrinsic causes except surgicel were excluded. Following the placement of nephrostomy tube, renal function recovered and symptoms disappeared. Antegrade pyeloureterography presented obstructive subpyelical ureteral segment. Afterwards, a reexploration and drainage with surgical removal of Surgicel along with a part of the surrounding tissue was performed (Figure 1). The allograft and ureter were preserved (Figure 2). During the postoperative course, antegrade pyeloureterography at day 11th showed no obstruction. The nephrostomy tube was removed.

Discussion

The reported incidence of ureteral obstruction after kidney transplantation varies between 1.3% and 10.2% in large series. It is mainly related to intrinsic obstruction (4-8).

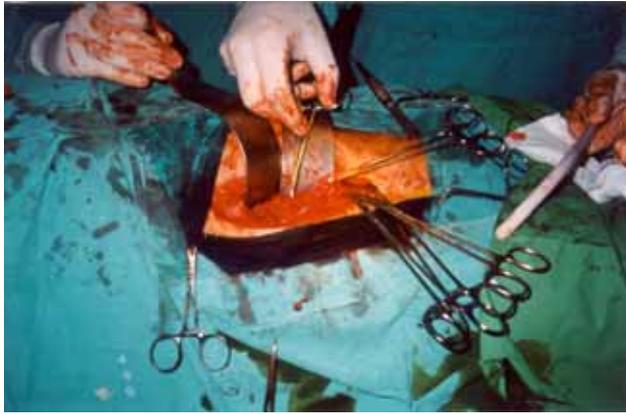


Figure 1. Surgical removal of Surgicel



Figure 2. Preserved allograft and ureter

Numerous Surgicel-complicating cases have been described in the literature. In 1949, "Oxycel retention syndrome" with fatal outcome was described (9). Also, incomplete reabsorption of the material and bacterial colonization have been

reported (10). It is well-known that inflammatory reactions develop secondary to foreign bodies. The same mechanism is activated by Surgicel. Foreign body appearing lesions are morphologically classified in two types. The first type are similar to those induced by implants. Such lesions are always associated with relevant macroscopic changes. The second type of lesions induce massive macroscopic changes similar to abscess, inflammatory pseudotumor or invasive carcinoma.

Histologically, it is represented by granulomatous lesion with fibrosis and necrosis. Since the histological and radiological findings are not specific, the changes induced by Surgicel usually lack (11). Renal allograft nephrectomy secondary to xanthogranulomatous pyelonephritis caused by Surgicel 22 months after the procedure have been describe (11).

In our report, in the patient with extrinsic ureteral obstruction by Surgicel, an excellent therapeutic outcome was attained and the allograft was preserved. The operative finding suggested that reactive periureteral and perigraft inflammation still had not produced extensive fibrosis. It demonstrates that early recognition of inflammatory-induced ureteral obstruction and timely and appropriate therapeutical procedures are of the utmost importance for successful treatment.

We should emphasise that in certain cases, complete operative documentation and description of the procedure are the key of success. It is necessary to establish good cooperation between all participants in the procedure in order to reduce morbidity and lethality rates and to achieve the best possible outcome.

References

1. Chen SL, Zhang G, Zhang HW, Lei T, Hu CC. Arachnoid adhesion caused by SURGICEL after operation for ventral spinal schwannoma. *Chin Med J (Engl)* 2010; 123(21): 435-9.
2. Durgakeri PU, Kaska M. Post-operative intraperitoneal adhesion prevention- the recent knowledge. *Rozhl Chir* 2006; 85(6): 286-9. [[PubMed](#)]
3. Opitz I, van der Veen HC, Braumann C, Ablassmaier B, Fuhrer K, Jacobi CA. The influence of adhesion prophylactic substances and taurolidine/heparin on local recurrence and intraperitoneal tumor growth after laparoscopic-assisted bowel resection of colon carcinoma in a rat model. *Surg Endosc* 2003; 17(7): 1098-104. [[CrossRef](#)] [[PubMed](#)]
4. Bašić D, Hadži Đokić J, Milutinović D, Đorđević N, Bašić M, Đokić M. Hirurške komplikacije na urinarnom traktu posle transplantacije bubrega. *Acta Medica Medianae* 2002; 7: 111-2.
5. Ashraf HS, Khan MU, Hussain I, Hyder I. Urological complications in ureteric stenting live related renal transplantation. *J Coll Physicians Surg Pak* 2011; 21(1): 34-6. [[PubMed](#)]
6. El Atat R, Derouiche A, Guellouz S, Gargah T, Lakhoua R, Cherbil M. Surgical complications in pediatric and adolescent renal transplantation. *Saudi J Kidney Dis Transpl* 2010; 21(2): 251-7. [[PubMed](#)]
7. Akoh JA, Opaluwa AS, Weller D. Urological complications of renal transplantation: Reducing the risk. *Saudi J Kidney Dis Transpl* 2009;20(6):1005-9. [[PubMed](#)]
8. Streeter EH, Little DM, Cranston DW, Morris PJ. The urological complications of renal transplantation: a series of 1535 patients. *BJU Int* 2002; 90 (7): 627-34. [[CrossRef](#)] [[PubMed](#)]
9. Vanderhoof E, Merendino K. Unfavorable reactions to oxidized cellulose (Oxycel) in the bed of the gallbladder. *Arch Surg* 1949; 58: 182-8. [[PubMed](#)]
10. Tang KW, Lamaro V, Jaworski R. Peritoneal histiocytic reaction associated with oxidized regenerated cellulose, a form of mucicarmophilic histiocytosis. *Pathology* 2009; 41(6): 598-600. [[CrossRef](#)] [[PubMed](#)]
11. Concha A, Esteban RJ, Talavera P, Osuna A, Asensio C. Xanthogranulomatous pyelonephritis caused by Surgicel in renal allograft. *Nephrol Dial Transplant* 1997; 12: 1509-11. [[CrossRef](#)]

OPSTRUKCIJA TRANSPLANTIRANOG BUBREGA UZROKOVANA SURGICEL-OM

Dragoslav Bašić, Ljubomir Đurašić, Bratislav Bašić, Marica Bašić, Drago Milutinović, Milan Đokić i Jovan Hadži Đokić

Surgicel (Johnson & Johnson Medical, New Brunswick, NJ) predstavlja dobro poznati hirurški hemostazni materijal. Ovaj rad prikazuje 36-godišnju bolesnicu koja je postoperativno imala ekstrinzičku opstrukciju transplantiranog bubrega, uzrokovanu Surgicel-om. Bolesnica je imala povišenu telesnu temperaturu, bol u predelu oko transplantiranog bubrega i hidronefrozu. Posle dijagnostičkog postupka, urađena je reeksploracija sa hirurškim uklanjanjem Surgicel-a. Operativni ishod bio je odličan. *Acta Medica Medianae 2011;50(1):51-53.*

Ključne reči: *surgicel, bubreg, opstrukcija transplantiranog bubrega*