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Influence of 4DryField® on the incidence of lymphoceles after pelvic lymphadenectomy in radical retropubic prostatovesiculectomy

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English summary

Aim: The incidence of lymphoceles (LC) after radical retropubic prostatovesiculectomy (RRP) ranges from 5-11% according to literature. LC that require therapy are quite rare, but may be associated with severe impairment and follow-up surgery. The present pilot study investigates to what extent 4DryField® (4DF), certified for hemostasis and adhesion prevention, influences lymphorrhoe and formation of symptomatic LC.

Method: From June 2013 to July 2014 a total of 104 patients had RRP including bilateral pelvic lymphadenectomy. A drain was placed in the right lower abdomen for 3-5 days in all cases (control [CT] group, n=51). In 53 patients, additionally a total of 5 g 4DF was administered to the area of the iliacal vessels and *Fossa obturatoria* on both sides (4DF group, n=53). Sonographic controls were performed postoperatively on days 5 and 8. Furthermore, the status was surveyed by the release reports of the rehabilitation clinic after 6-8 weeks. Telephone consultation was conducted (in the median 7 months postoperatively) for revealing LC, which necessitated intervention in long-term course.

Results: The patient population and average number of removed lymph nodes (CT: 18, 4DF: 17) was comparable in both groups. There was a somewhat reduced drain loss in the 4DF group as compared to CT (308.5 vs. 452.5 ml, n.s.). In the CT group there were 5 outliers with drain loss >1000 ml (1100-3300 ml), whereas there was none in the 4DF group (p<0.05). Within the 1st week, 9 patients in each group developed LC. In later postoperative controls the number of LC was twice as high in the CT group (16 LC) as compared to the 4DF group (8 LC). Accordingly, concerning LC requiring intervention (i.e. volume >1000 ml), there were 4 patients in the CT and 2 in the 4DF group. The mean treatment duration (time of drainage) of LC was 45 days in CT and only 12 days in 4DF patients (p<0.05). A marsupialization was not necessary in any case.

Discussion: With 4DF treatment a somewhat reduction of drain loss was noticeable, but needs to be substantiated in larger cohorts. Noticeably, with 4DF treatment there were no incidences with excessive drain loss (>1000 mL). This indicates that 4DF application after RRP with extensive lymph adenectomy might have a favourable impact on postoperative loss of wound secretion and/or lymph. Interestingly, in the later course the incidence of LC was significantly lower (reduced by half) in 4DF patients as compared to CT, corresponding with lower rate of intervention. In cases with LC necessitating intervention, the duration of treatment in 4DF patients was significantly shorter (12 vs. 45 days).

Conclusions: Application of 4DF in patients with radical retropubic prostatovesiculectomy and pelvic lymphadenectomy leads to:

- Reduction of drain loss: 453 ml (CT group) vs. 309 ml (4DF group)
- Reduction of incidence of high-volume drain loss (>1000 ml): 5 vs. 0 patients
- Reduction of incidence of late lymphoceles: 16 vs. 8
- Reduction of time of drainage: 45 vs. 12 days