



An Unusual Presentation of Urachal Carcinoma Treated by Complete Laparoscopic Excision

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Abstract

Urachal carcinoma is an exceedingly rare tumor which may not present alarming clinical findings in the early stages and has a predilection for local invasion and recurrence. We present a case of urachal carcinoma managed by complete excision through laparoscopic approach. The patient two years later developed a pancreatic tumor and undergone a Whipple procedure.

Introduction

Urachal carcinoma constitute 0.34–0.7% of all bladder tumors. The tumor may not cause dysplasia in the bladder mucosa and may not present with alarming clinical findings like hematuria. Besides the delays in diagnosis, predilection of the tumor for local invasion and recurrence leads to a poor prognosis, with 5-year survival rates of 6.5% to 55% [1]. Traditionally patients with respectable tumors are treated by en bloc cystoprostatectomy and wide excision of the urachus and umbilicus. But several reports have also shown reliability of extended partial cystectomy and excision of umbilicus with comparable survival rates to those of radical cystectomy. Additionally a few groups have reported successful excision of urachal tumors by laparoscopic approach [2].

Case Presentation

On a routine postoperative follow up examination three years after a left heminephrectomy for renal cell carcinoma, 64 years old male patient has been diagnosed to have a tumor at the anterior abdominal wall (Figure 1). At the time of diagnosis he had no complaints, computed tomography revealed a cystic mass of 9 cm in size, below the level of umbilicus. There were no calcifications in the direct abdominal graphsies, and cystoscopy and intravenous urography examinations were negative. The only positive finding was the presence of mucus in urine examination (Figure 2). Despite the medical advice to respect the tumor, he delayed the operation for one year, and then finally agreed to undergo laparoscopic surgery (Figure 3). At the time of operation patient was symptom free and repeated laboratory examinations revealed no progression. The tumor has been respected laparoscopically using the surgical technique described below. Since the intraoperative frozen section examination was inconclusive and the tumor has been respected completely no further attempts for a more radical resection were undertaken.

Surgical technique

The urachal mass was excised with safe tumor free margins through three trocars. The first trocar was inserted in midline above the umbilicus using the open technique, and the other two trocars were inserted in both flanks. Dissection has been performed by using UltraCision, the urachal mass was completely excised with its urachal attachment at the umbilicus and a cuff of perivesicular tissue which was macroscopically tumor free. No tumoral infiltration in the fascia transversalis, bladder wall or other intra abdominal structure was observed during the dissection (Figure 4).

Histologically presence of a safe tumor free margin has been confirmed within the medial umbilical fold, but the frozen section examination was inconclusive related to the histologic type of the tumor, so that a more radical resection including a partial cystectomy was not attempted (Figure 5).

Pathologic examination of the tumor has revealed a mucin-positive adenocarcinoma. The patient was symptom free for two years, and follow up computed tomography examinations have revealed no recurrence. After two years the patient has developed a pancreatic tumor (adenocarcinoma) for which a Whipple procedure was performed. The fast-growing and highly invasive tumour led bowel obstruction requiring two further surgeries. The patient deceased due to tumor progression

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Figure 1: Macroscopic appearance intra operatively showing an isolated mass.

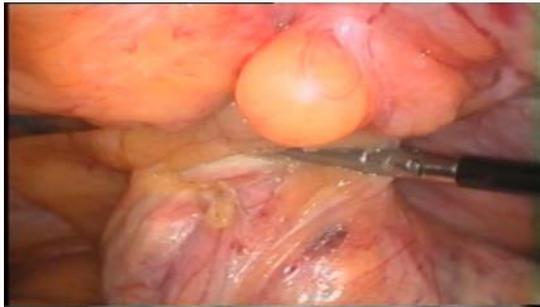


Figure 2: Dissection of the urachus with Ultra Cision.

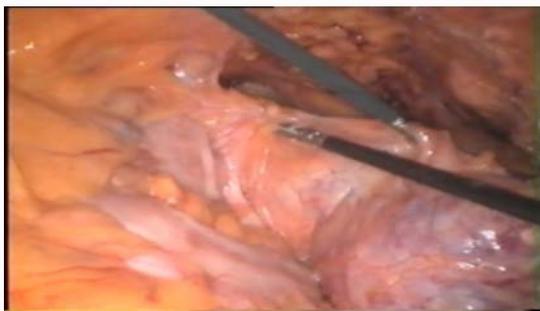


Figure 3: Dissection towards bladder dome.



Figure 4: Macroscopic appearance of specimen.

of the pancreatic carcinoma 15 months after the Whipple procedure (Figure 6).

Discussion

Urachal carcinoma constitute 0.34–0.7% of all bladder tumors. Histologically urachal tumours have been classified as mucin-positive adenocarcinoma (69%), mucin-negative adenocarcinoma (15%), sarcoma (8%), squamous cell cancer (3%), transitional cell carcinoma (3%), and other mesenchymal neoplasmas like desmoid and

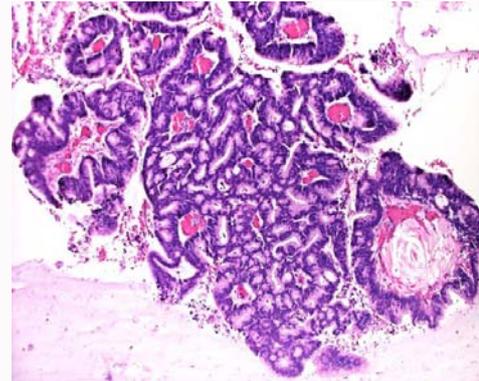


Figure 5: Microscopic view (H&E).

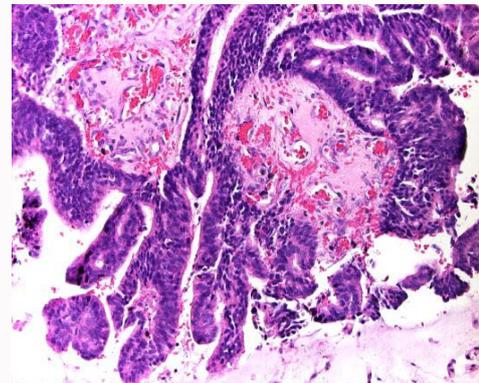


Figure 6: Microscopic view (H&E).

leiomyoma, and myofibroblastic tumor arising from the wall of the urachus (2%) [3]. Other urachal disorders that must be considered in the differential diagnosis include Castelman’s disease of the urachus (a lymphoid tissue disorder), urachal leiomyosarcoma and congenital urachal anomalies [4].

Diagnosis of urachus carcinoma prior to surgery is difficult in view of the nonspecific abdominal or urinary signs and symptoms. The tumor may not cause dysplasia in the bladder mucosa and may not present with alarming clinical findings. Hematuria or the presence of a suprapubic mass is the most frequent features. Other symptoms described include umbilical discharge, dysuria or the finding of mucus in urine. In 50% to 70% of cases psammomatous calcifications can be detected with computed tomography or ultrasound, while plain abdominal films detect only about 5% of these calcifications. A filling defect of the bladder dome may be detected with intravenous urography. Ultrasound is very useful as it can also differentiate the cystic components of an urachal carcinoma. Colour Doppler ultrasonography can demonstrate neovascularisations [5].

Besides the delays in diagnosis, predilection of the tumor for local invasion and recurrence leads to a poor prognosis, with 5-year survival rates of 6.5% to 55% [6].

Distant metastases from urachal carcinoma are reported to be a late event. Few patients had distant metastases without local recurrence after excision of clinically localized tumor. Both dissemination during the radical surgery and distant metastasis could be considered. The prognosis for metastatic urachal cancer is generally very poor, and no consensus has been reached on how to manage the disease best [7-9].

Complete surgical resection of the tumour appears to offer the best chance for prolonged survival. Postoperative irradiation and chemotherapy may be beneficial in some patients. Urachal adenocarcinomas of the colonic type are well differentiated histologically and have a good prognosis; they could be treated with segmental rather than radical excision. Traditionally patients with resectable tumors are treated by en bloc cystoprostatectomy and wide excision of the urachus and umbilicus [10-12]. But several reports have also shown reliability of extended partial cystectomy and excision of umbilicus with comparable survival rates to those of radical cystectomy. Additionally a few groups have reported successful excision of urachal tumors by laparoscopic partial cystectomy with en bloc resection of the urachus. Both transperitoneal and extraperitoneal methods have been described. The laparoscopic approach allows for precise tissue dissection and affords the well established benefits of diminished blood loss, shorter hospital stay, and faster convalescence.

Conclusion

Complete surgical resection of the tumour as part of a multimodal strategy involving radiation and chemotherapy appears to offer the best chance for prolonged survival. The newly developed laparoscopic instrument and also improving surgical skills through newest learning methods are steps leading to safety and technically easily performance of laparoscopic urachal carcinoma resection. The method is safe and offers a great patient satisfaction.

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