The urachus extends from the anterior dome of the bladder to the umbilicus. It has three distinct layers. Incomplete obliteration of the urachus manifests in various forms (e.g., urachal cyst, urachal sinus, urachal diverticulum, and patent urachal fistula. Symptomatic urachal cyst and patent urachal fistula warrant surgical excision and can be accomplished laparoscopically [1,2]. Simple drainage of a urachal cyst is associated with recurrent infections and even late occurrence of an adenocarcinoma.

**Surgical Technique**

The patient is placed in the supine head-low position. An initial cystoscopy is performed to determine the site of the urachal fistula. In a patient with a patent urachal fistula, a leak can be demonstrated through the umbilical sinus. A supraumbilical 10-mm camera port is inserted, and two 5-mm working ports are inserted 4-cm lateral to the umbilicus. The fistula is detached at the umbilical end using ultracision or diathermy. It is rarely necessary to remove the umbilicus in benign lesions in children. The dissection is carried on up to the dome of the bladder. The patent urachus with a rim of bladder is excised. The bladder defect is closed with 2-0 Vicryl interrupted sutures, and a Foley catheter is left indwelling urethrally. An omental patch may be tacked on top of the suture line in the bladder. The specimen can usually be retrieved through the 5-mm port. If that is not possible, then it may be removed through the 10-mm port. The umbilical defect closes secondarily without the need for any surgical closure. Excision of the urachal fistula can be completed laparoscopically with minimal morbidity to the patient. The chance of recurrent fistula is minimal with the use of an omental patch.
Laparoscopic Excision of the Urachal Remnant

Fig. 22.1. An umbilical sinus through which urine dribbles continuously

Fig. 22.2. A micturating cystourethrography (MCU) reveals a patent urachal remnant in a child; arrows point to the urachus (UB, urinary bladder)

Fig. 22.3. Cystoscopy shows a sinus (arrow) in the dome of the bladder (while the bladder is being filled, saline escapes through the umbilical sinus)

Fig. 22.4. External view of the port positions (H, head end; F, foot end)