Novel use of tendon tunneler to create space with minimal dissection in endoscopic head and neck operations

Sir,

Endoscopic surgery for benign head and neck lesion is effective and has cosmetically superior results. This technique, however, carries the risk of inadvertent injury to neural and vascular structures due to the extensive sub-cutaneous working space that is required to be created along the port tract in order to afford access to the lesion. We present an improvisation that creates the working space around the lesion using an inexpensive tendon tunneler thus minimizing dissection and consequent tissue damage.

Between August and December 2012, three children (two boys, one girl) ages 5, 8, and 15 years underwent endoscopic head and neck surgery at Christian Medical College and Hospital, Vellore. The two boys had neglected sternomastoid contracture causing severe torticollis and the girl had an external angular dermoid. The sternomastoid contracture was accessed from the anterior axillary fold with the children supine with a bolster under the shoulder to extend the neck. A 5-mm optical port in the center and two 3-mm working ports on either side at the same transverse level were planned to triangulate with the lesion at the apex. The angular dermoid was accessed from the scalp requiring three 1-cm area of hair to be shaved behind the hair line with a similar port arrangement [Figure 1]. The metal tendon tunneler was introduced through a stab incision at the optical port site and guided toward the lesion with closed jaws. Once the target was reached, the jaws of the tunneler were repeatedly opened and closed between the lesion and skin to create the space. Finger palpation on the skin was helpful to guide dissection. The tunneler was retrieved and the camera port was introduced with insufflation. The steps were repeated for the working ports under vision. The lesion was dissected using a 3-mm Maryland and hook cautery to complete the operation.

All procedures were successfully completed using the endoscopic approach. The dermoid cyst inadvertently ruptured intra-operatively. The contents were removed using suction and the wound was copiously irrigated. Post-operative pain was controlled with acetaminophen, and all patients were discharged from the hospital the next day. All patients healed well with an esthetically pleasing, hidden scar and the families were pleased with the cosmetic results [Figure 1]. There were no post-operative infections or neuropraxia. No special instruments were required thus making the operation feasible and affordable.

Endoscopic surgery is used for a variety of pediatric procedures including tissue expander placement, torticollis release, and excision of facial dermoids. Several variations in the technique are possible and have been described. Dutta et al, have stressed the necessity to create a wide cavernous working space to facilitate the easy navigation and exchange of instruments.[1] Steele et al. on the other hand dissected in the subgaleal plane to avoid nerve injury.[2] These concerns were addressed by the use of the metal tunneler which creates a precise port tract and working space only around the lesion. We did not find it difficult to navigate or exchange instruments. Our technique is beneficial in small children, where relatively large sub-cutaneous dissection can cause troublesome collections and nerve injury.

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Sir,

Multicystic dysplastic kidney (MCDK) lacks a discernible pelvis and calices, and is nearly always associated with atresia at the uretero-pelvic junction.[1] Finding a ureter till the bladder in a case of MCDK is a rare of the rarest observation, which needs to be reported.

A three-year-old male child presented with a history of recurrent urinary tract infection for the last 2 years. A USG showed presence of randomly arranged non-communicating multiple cysts of varying sizes with little renal parenchyma on the right side, and a Dimercaptosuccinic acid (DMSA) scan showed an absence of renal function. Diagnosis of right MCDK was confirmed. Micturating cystourethrogram (MCU) showed contralateral grade III reflux. Intraoperatively, the kidney was replaced by multiple cysts, and normal ureter was seen distally till the bladder [Figure 1a]. Histopathological examination confirmed MCDK with normal distal ureter.

The second case was a five-year-old female child with antenatally diagnosed left MCDK in close follow-up, having persistent hypertension, and not responding to medical management was taken up for surgery after investigations such as USG, MCU, and DMSA. Contralateral kidney was normal. Retroperitoneoscopic nephroureterectomy was performed. Intraoperatively, we found a multicystic kidney and normal ureter [Figure 1b] going till the bladder. Specimen sent for histopathological examination confirmed the finding of MCDK with intact non-atretic ureter. The child became normotensive two months after surgery.

It is important to distinguish between MCDK, poorly functioning hydronephrotic kidneys (caused by pelviureteric junction obstruction), and a rarely multilocular cystic renal tumor. MCDK is characterized by tense, non-communicating cysts, non-medial location of largest cyst, and absence of functioning renal parenchyma, mostly associated with atresia or hypoplasia of the ureter. The poorly functioning hydronephrotic kidneys may have reniform configuration, cysts organized around periphery of the kidney, central medial cyst (renal pelvis), connections between peripheral cysts, and the medial cyst. Multilocular cystic renal tumor is a very rare tumor of the neonatal kidney and can be composed predominantly of large cysts. USG may show a multicystic lesion, cysts circumscribed by a thick capsule, and cystic areas are between solid areas.

Advancements in USG have provided a high diagnostic accuracy for identifying MCDK. To address the unusual finding of non-atretic ureter in MCDK, understanding the embryological basis of this condition is required. The pathogenesis of MCDK is unknown; there is possibly a perturbation of the interaction between the ureteric duct and metanephric blastema.[2]

Atresia of pelvis and ureter and an absent arterial supply is also common. The majority of dysplastic kidneys are associated with urinary tract obstruction commencing in early embryonic life. Two phenotypes of renal dysplasia are associated with urinary tract abnormality: MCDK and obstructive dysplasia (ORD).[3]

According to the previous description by Potter and co-workers, cystogenesis of renal dysplasia is thought to be an inhibition of the ampullary activity of the ureteric buds preventing induction of nephrons, causing cessation of branching and converting ampullary portions.[5]

The embryological basis of this condition is not fully elucidated; in the near future, further understanding of