ANOMALY OF ECTOPIC TESTES IN DOGS

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Five male dogs were brought to the Division of surgery, IVRI with swellings lateral to penis/scrotum which was diagnosed as maldescended testes located subcutaneously. Surgical removal of the testes was performed by bilateral orchecectomy under general anaesthesia. The consistency of the ectopic testis was harder and the size was larger in comparison to the eutopic testis in four cases out of five. Post-operatively, antibiotics and analgesics were given. Animals recovered completely.

Keywords: Anomaly, Ectopic-testis, Dog, Testicular-mal descent

In dogs, during the gestation and following birth, the male gonads move from the lumbar area, where they originate, to their final location in the scrotum (Yates et al., 2003; Amann and Veeramachaneni, 2007). Contrary to this is maldescent of testes where in one or both the testicles do not reach the scrotum. An ectopic testis is one that is seen in an abnormal location outside the inguinal ring (D’Cruz and Das, 2004). In cryptic condition, the testis remains inside the abdomen or inguinal canal (Yates et al., 2003). However, both the abnormalities are often referred to in the literature as cryptorchidism, thus knowledge about the incidence of the specific conditions is lacking.

Maldescent of testes is a developmental defect of genitals in dogs (Shulz et al., 1996), with unilateral malposition/cryptorchidism more common in the right testis (Romagnoli, 1991). Increased risks in small sized dogs have been reported (Johnston et al., 2001; Yates et al., 2003). There are reports of ectopic position of testis/testes in Spitz (Singh et al., 2008), Alsation (Nandi and Som, 1986) and Pomeranian (Dabas and Chaudhari, 2010). Cryptorchid dogs show a 3.6 to 13.6 fold higher risk of developing a neoplasm compared with that of normal dogs (Hayes and Pendergrass, 1976; Romagnoli, 1991; Yates et al., 2003; Cortes, 2004). The objective of this study was to report the Anomaly of ectopic testes in dogs and its presentation on clinical examination with surgical removal by bilateral orchecectomy.

Materials and Methods

Five male dogs were presented to the Division of Surgery, IVRI with swellings lateral to penis which were diagnosed as maldescended testicle located subcutaneously. Information regarding age and breed were recorded. During clinical examination, particular attention was paid to recording of the macroscopic features of the ectopic testis, as well as those of the scrotal testis. Side and position of the maldescented testicle with respect to penis/scrotum, comparative size and consistency of the testicles (ectopic vs. eutopic) were recorded. Animals were also examined for other congenital genital or extra genital malformations. A bilateral orchecectomy was performed under general anaesthesia.

The general condition of the dogs, as well as the presurgical findings from the routine check-up, revealed that all the cases were good candidates for general anaesthesia and surgery. Thus, bilateral orchecectomy was successfully performed. The anaesthetic protocol included atropine 0.04mg/kg i/m, diazepam 0.5 mg/kg as slow i/v and pentazocine 3 mg/kg i/v to provide basal anaesthesia. Anaesthesia was induced with 2.5 % solution of thiopentone sodium to effect and the animal was intubated and maintained in the state of surgical anaesthesia with intermittent bolus injection of 2.5% thiopentone sodium till the end of surgery. The animals were positioned in dorsal recumbency. The site was prepared aseptically for surgery. The mass was held between the thumb and index finger of the left hand and an incision was given on the skin over the swelling. The subcutaneous fat cushion beneath the skin, when incised and
explored revealed the ectopic testis. A pre-scrotal incision was given for the removal of the scrotal testis. The skin was sutured with 3-0 monofilament nylon in simple interrupted manner. The post-operative treatment included ceftriaxone i/m for 5 days and meloxicam i/m for 3 days. Antiseptic dressing with povidone iodine was recommended and the sutures were removed on the 10\textsuperscript{th} post-operative day.

**Results and Discussion**

In all the five dogs maldescended testicles were located extra-abdominally and thus classified as ectopic testes. The size and consistency of ectopic testes were compared with their scrotal counterparts. Data regarding the age, breed, the maldescended testicle side and position, size and consistency are presented in Table 1.

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Breed</th>
<th>Age (yrs)</th>
<th>Testicular maldescent</th>
<th>Testicular position</th>
<th>Comparative Testicular size</th>
<th>Comparative Testicular consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (fig. 1)</td>
<td>Spitz</td>
<td>2</td>
<td>Right ectopia</td>
<td>Lateral to penis</td>
<td>Large</td>
<td>Firm</td>
</tr>
<tr>
<td>2 (fig. 2)</td>
<td>Mongrel</td>
<td>3</td>
<td>Left ectopia</td>
<td>Lateral to penis</td>
<td>Small</td>
<td>Not firm</td>
</tr>
<tr>
<td>3 (fig. 3)</td>
<td>Pomarian</td>
<td>8</td>
<td>Left ectopia</td>
<td>Lateral to scrotum</td>
<td>Large</td>
<td>Firm</td>
</tr>
<tr>
<td>4 (fig. 4)</td>
<td>Spitz</td>
<td>2.5</td>
<td>Right ectopia</td>
<td>Lateral to penis</td>
<td>Large</td>
<td>Firm</td>
</tr>
<tr>
<td>5 (fig. 5)</td>
<td>Spitz</td>
<td>6</td>
<td>Right ectopia</td>
<td>Lateral to penis</td>
<td>Large</td>
<td>Firm</td>
</tr>
</tbody>
</table>

The less number of cases being encountered indicates that the condition is either rare in dogs or not presented. The age of the affected dogs presented was above two years which indicates that the dog owners appreciate the unusual swelling of ectopic testes only when the size of the testes increases (due to tumour). It is interesting to note that, even with a small number of dogs being presented, most were representative of the breed considered at high risk for testicular maldecent as also reported by Johnston et al. (2001); Yates et al. (2003). The ectopic testicles were located subcutaneously, lateral to the penis in four cases and lateral to the scrotum in one case. This finding seems to suggest that, in the dogs of the current study with testicular ectopia, both the first and second phase were impaired during testicular descent as also mentioned by Veronesi et al. (2009). Right ectopia (n=3) was more common than the left (n=2). It supported the finding of Veronesi et al. (2009). At the qualitative assessment, the size and testicular consistency of the ectopic testicles was increased in 4 dogs compared with that of their scrotal counterparts (Fig. 1-4). This might be due to the neoplastic transformation in the ectopic testes. Tucker and Smith

![Fig. 1: case 1. Right ectopia, testes lateral to penis, larger and firm](image1)

![Fig. 2: case Left ectopia testes smaller and lateral to penis](image2)
(2008) narrated about the interstitial cell and sertoli cell tumors in ectopic testes. The age of the dogs in the present study further suggested that the increase in the testicular size may be due to the neoplastic transformations as the tendency towards neoplastic transformations increases with age as also mentioned by Tucker and Smith (2008). The ectopic testis was found reduced in size and consistency than the ectopic only in one case (Fig 2). No other developmental diseases with testicular maldescent were recorded in the present study but the term cryptorchidism, though developmental diseases is reported to be associated with ectopic testes since cryptorchidism is a heritable trait as also reported by Yates et al. (2003).

References