Vol. XII (3-4) 1975.

INGUINAL HERNIA IN BITCHES

Nusrat Iqbal Chaudhry,* R. A. Chaudhry, T. Aziz, M. Mumtaz. and N. I. Cheema

Inguinal hernia is a fairly common condition affecting the middle aged and aged unspayed bitches. Various theories regarding its aetiology have been proposed but most workers agree on its hereditary origin. In the majority of cases one healthy nongravid uterine horn constitutes the hernial contents. In some cases the uterine horn may be gravid or suffering from pyometra. A detailed analysis of 13 cases of inguinal hernia regarding its aetiology, clinical features and herniorrhaphy procedure has been discussed.

INTRODUCTION

Dorland (1952) defined the inguinal hernia as "any herniation into the inguinal canal". It had been observed as a very common condition in bitches, rarely seen in cats, sows and mares and had not been described in cows or ewes (Roberts, 1971). Atkinson (1889) cited by Wright (1963) stated that in regard to the canine species he had only seen this condition in bitches. This type of hernia commonly affected bitches that were over 5 years of age (Wright, 1963). On the other hand McCunn (1953) noted that this hernia could often be discerned in a newly born or very young puppy. The hernial sac invariably contained a uterine horn, which might be nongravid, gravid or diseased (Wright, 1963). Cases in which uterine horn was gravid or involved in pyometra, both horns might be present in a unilateral hernia. Wright (1963) further recorded a case of inguinal hernial in a bitch in which uterus and small intestine were contained in the hernial sac. Lawler (1963) cited by Wright (1963) encountered a bitch in which a small long standing swelling in the inguinal region suddenly enlarged due to the presence of distended urinary bladder in it. Ormrod (1966) stated that uterus, intestine, omentum and bladder might be displaced separately or together into the hernial sac. The incidence could be bilateral or unilateral, usually the latter (Roberts, 1971). According to McCunn (1953), it occurred most frequently on the left side. Riser (1963) observed that spayed bitches when

*Department of Clinical Medicine & Surgery, Faculty of Vety. Science, University of Agriculture, Lyallpur.

given large amounts of estrogen developed inguinal hernias within 90 days. One bitch with an inguinal hernia was spayed through a midline incision and the hernia was left intact. After one year this hernia had spontaneously disappeared. He proposed a close relationship between estrogen production by the ovary and the development of inguinal hernia in bithes. It was suggested by Matera, Stopiglia and Veiga (1964) that anatomical peculiarites in the bitch were responsible for the high incidence of this condition. As compared to the male, inguinal canal of the bitch was short and its diameter was greater which might permit easily the passage of the round uterine ligament (Ellett and Archibald, 1965). These authors also attributed that the increased intraabdominal pressure e.g. during ascites or obesity or distension or enlargement of abdominal organs raised the frequency of this hernia. On the other hand Collins (1965) blamed trauma as a cause of inguinal hernia. Wright (1963) remarked that there was no special breed predilection, while other workers contended that there was inherited predisposition to this problem and it was more common in brachycephalic breeds, Cocker spaniels and Dackshunds (Smythe, 1959; young 1955; and Matera *et al.*, 1964). It had been generally agreed that in this mishap there was no breakdown of peritoneal continuity and the normal peritoneal lining of the canal became distended to form the hernial sac (Ormrod, 1966). This observation was confirmed in all 13 cases under report.

CLINICAL FINDINGS

A series of 13 cases of unilateral inguinal hernia (hysterocele) in bitches were attended. In 12 patients only one horn of the uterus was contained in the hernial sac, while in one case both horns were involved in the sac. Ten cases involved healthy horn/horns of the uterus, two were suffering from pyometra, and in one case the horn was gravid. The affected animals were unspayed bitches between four to eight years of age. The hernia was characterized by a swelling in the inguinal region, and the pendulous hernial sac was visible in some patients, even in standing position (Fig. 1). The swelling varied in size from that of an egg to a large sized orange. It was present as a painless swelling in the inguinal region and this displaced the mammary gland on the affected side The general health of these animals was not disturbed except in two cases suffering from pyometra, which were in a state of toxaemia. The hernia in ten cases, where healthy nongravid uterine horn/horns constituted the hernial contents, was easily reducible (Fig. 2 and 3). In the remaining three cases, the hernia was irreducible

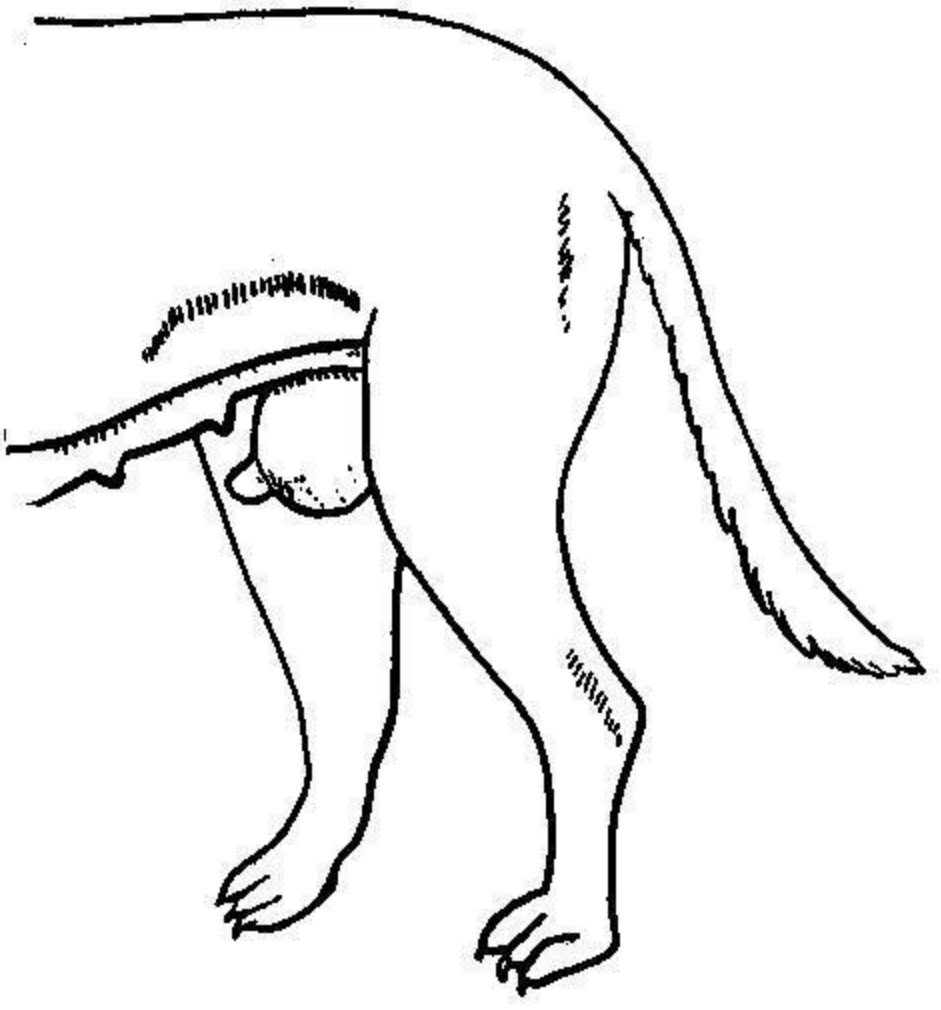

Fig. 1. Inguinal Hernia in the bitch.

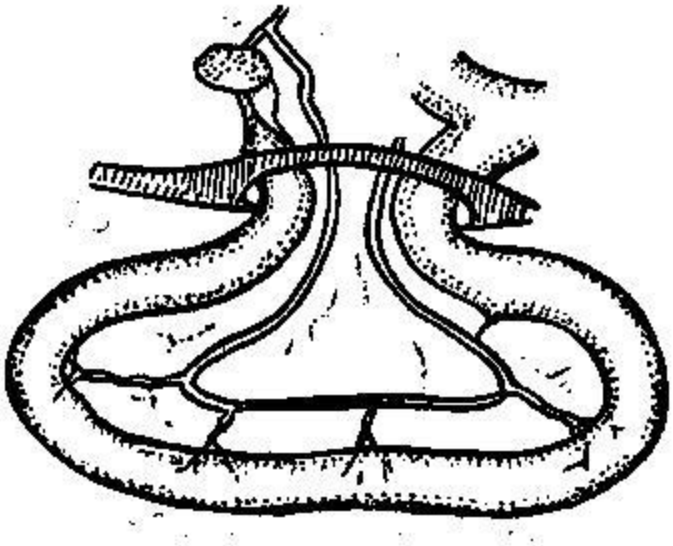

Fig. 2. Inguinal hysterocele in the bitch (hernial) sac omitted).

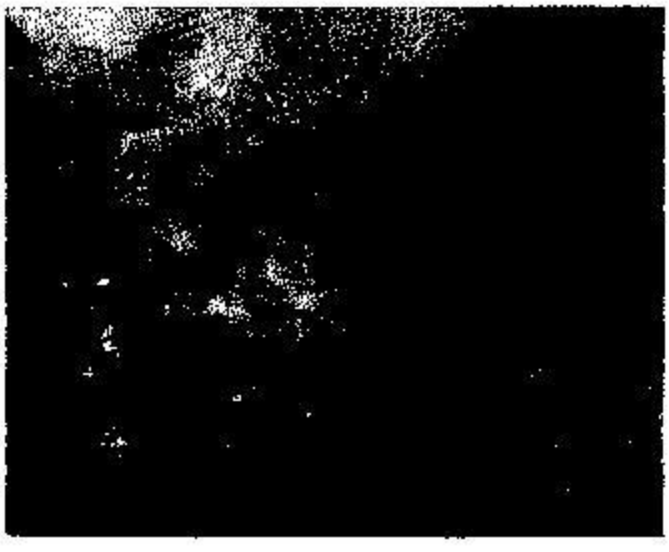

Fig. 3. Showing both horns of uterus and omentum.

due to large sized horn in hernial sac teeming with pus in two, and a large gravid horn supporting one full term dead foetus in the other case (Fig 4). In all the cases the ovary of the affected side was located on the abdominal aspect of the ring.

SURGICAL REPAIR

The animals were prepared for an aseptic surgical procedure. The skin preparation included the entire ventral aspect of the abdomen as well as the medial aspect of the thigh on the affected side. After premedication a general anaesthesia was induced by using Thiopentone sodium intravenously, supplemented with ether by open mask when required. The herniorrhaphy was done with the patient positioned in dorsal recumbency. The hernial contents were not reduced into the abdomen at this stage.

A skin incision was made over the apex of the swelling lateral to the fold of the groin. (Fig. 5) The incision was deepened through the subcutaneous tissue. Extreme care was exercised not to penetrate the hernial sac. This avoided making an opening into the peritoneum. The sac was isolated down to the hernial ring by blunt dissection (Fig 6). When the hernial sac contained a nongravid uterine horn the cotents were readily reducible into the abdomen. It was accomplished by grasping the peritoneal sac with artery forceps and twisting it to form a cord within the inguinal canal. A transfixion ligature of chromic catgut was applied as close to the inguinal ring as possible to close the peritoneum. (Fig. 7). The redundant portion of the sac distal to the ligature was resected. Meticulous care was taken to avoid damage to the pudendal vessels located at the caudal edge of the ring.

The inguinal canal was closed by applying mattress sutures. The sutures were started at the cranial end of the ring. The last suture at the caudal commissure of the ring was placed slightly away from the pudendal artery and vein, so as to avoid damaging and constricting these vessels. The skin incision was sutured by applying vertical mattress sutures.

In two cases the hernial sac contained one pyometric horn which was full of pus. The other horn also distended with pus was abdominally situated. The hernial swelling was not reduced by twisting it, as it could burst the the diseased horn. In these cases, the hernial ring was enlarged to facilitate the reduction of the distended horn. This entailed incising the abdominal wall through all layers forwards from the anterior edge of the ring, for a distance of about two inches. After reduction of the horn, the hernial sac

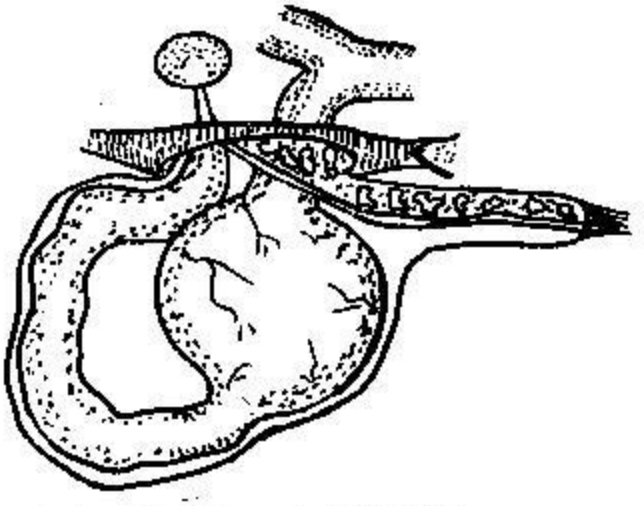

Fig. 4. Inguinal gravid hysterocele in the bitch.

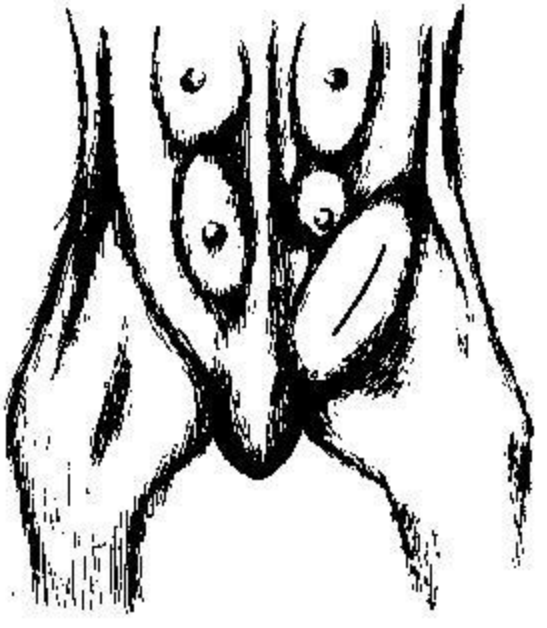

Fig. 5. Dark line indicates the site of the incision.

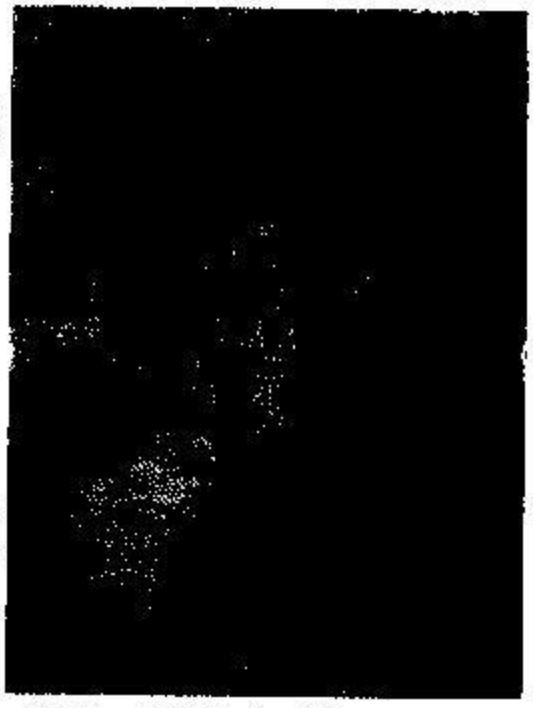

Fig. 6. Showing hernial sac.

Fig. 7. A transfixing ligature applied to the emptied hernial sac.

and skin incision were dealt with the aforementioned method. The ovariohysterectomy was done through midline incision simultaneously with the standard technique.

In one case comprising of gravid horn in the hernial sac, after opening the sac, caesarian hysterotomy was performed to remove the foetus. When the horn was opened it revealed a fully developed dead foetus in the early stages of decomposition. The horn was replaced in the abdomen after necessary repair.

POST-OPERATIVE CARE

The wound was examined daily but dressed with antiseptic dressing on alternate days. There was oedematous swelling and congestion at the incision site which subsided after a few days. Procain penicillin was administered for five days in two cases suffering from pyometra. In addition, dextrose with saline 5% solution was administered in these cases to combat shock and dehydration. All the patients recovered without showing any complications during the healing phase or relapse afterwards. Sutures were removed on the ninth day post operation.

DISCUSSION

Of all the domestic animals the dog probably suffers the greatest incidence of hernia. Among the two sexes the incidence of hernia was higher in the female in which sex inguinal variety was encountered most frequently (McCunn, 1953). Inguinal hernia had been differentiated from scrotal hernia by sex (Lacroix, 1957). But in contrast to scrotal hernia which was a rarity in the male dogs, the bitches commonly suffered from inguinal hernia. Inspite of common occurrence of inguinal hernia much ambiguity and confusion enshrouds the terminology used in the veterinary literature for this hernia in two sexes. The authors recommend that the term inguinal hernia may be exclusively used when this condition affects females. On the other hand the term scrotal hernia be used when the condition affects males, irrespective of whether the hernial contents are in the inguinal canal or are located in the scrotum.

In reducible type of hernia, diagnosis did not offer any difficulty, but when hernia was irreducible, the diagnosis necessitated the use of clinical aids. The swelling in the inguinal region might be mistaken for a mammary tumor or an abscess. In inguinal hernia the skin could be easily moved over the sac, whereas in neoplasm the skin was usually tightly attached to the neoplastic mass. Moreover a tumor was usually firm in consistency with lobulated

or nodular structure (Ellett and Archibald, 1965). Clinically an acute abscess presented warm feeling to touch, characterized by leucocytosis and slight rise in body temperature. In addition an exploratory puncture with a needle was always helpful to ascertain the contents of the swelling in any disputed case. Radiographs would reveal foetal skeletons and help in differential diagnosis of hysterocele involving gravid or a pyometric uterus. Radiographic aid in diagnosis is helpful only, when the foetal skeletons have sufficiently ossified. This generally happened any time between forty and fifty days of gestation in bitches (Carlson, 1967).

Surgical correction of the condition should not be deferred for too long, as with all other forms of hernia, complications could develop with the passage of time. In case where the hernial sac contained a gravid or pyometric horn of the uterus the conventional technique of reducing the hernia by manipulation and twisting the sac in the form of a cord, was not recommended. It could result in pathological changes in the uterus, death of the foetus, or rupture of the horn, peritonitis and death.

The authors did not agree with Collins (1965) who advocated a traumatic theory to result in inguinal hernia, as in their cases no trace of trauma or lacerations at the site of hernia were seen. In one case involving a gravid horn in the sac, the herniation would have occurred before or during an earlier stage of foetal development. As it was quite evident that the diameter of the inguinal ring could not have permitted passage of the fully developed foetus. Duration of this incident was not known, but apparently much of the developmet of the dead foetus occurred after the moment of herniation.

Since a general consensus of opinion favoured an inherited predisposition to this disease, the affected animals should not be used for future breeding. It would be both proper and economical if ovariohystrectomy was performed at the time of inguinal herniorrhaphy.

LITERATURE CITED

Carlson, W. D. 1965. Veterinary Rodiology. 2nd Ed. Lea and Febiger Philadelphia. 360.

Collins, D.R. 1965. Interwoven polyethylene mesh prosthesis in surgical repair of inguinal hernia in the dog. Vet Med./Sm Anim. Clinician. 377-381.

Dorland, W.A.N. 1952. The American Illustrated Medical Dictionary 22nd Ed., W.B. Saunders Co., Philadelphia, Pa.

Ellett, E.W. and J. Archibald. 1965. Inguinal hernia. In Canine Surgery. 1st Archibald Ed. Amer. Vet. Publ. Inc. Ill. 482-485.

LaCroix, J. V. 1957. Canine Surgery. 4th Ed., Amer. Vet. Publ. Santa-Barbara Calif. 452-453.

Matera, E.A., Stopiglia, A.V. and J.S.M. Veiga. 1964. Inguinal hysterocele in the bitch. Vet. Med./Sm. Anim Clinician. 36-37.

McCunn, J. 1953. Hobday's Surgical diseases of the dog and cat. 6th Ed. Bailliers Tindall and Cox, London. 265-270.

Ormrod, A. N. 1966. Surgery of the dog and cat. 1st. Ed. Williams and Wilkins Company Baltimore. 163.

Riser, W. H. 1963. Inguinal hernia containing a portion of the uterine horn and a foetus. Jour. Amer. Vet. Med. Assoc. 143:64.

Roberts, S.J. 1971. Veterinary Obstetrics and Genital Diseases. 2nd Ed. published by the author. Edwards Brothers, Inc. (Distributor) Ann Arbor, Michigan. 184.

Smythe, R. H. 1959. Clinical Veterinary Surgery. 1st Ed. Crosby Lockwood and Son Ltd. London. 100.

Wright, J.G. 1963. The Surgery of the inguinal canal in animals. Vet. Rec. 75: 1352-1367.

Young, G.B. 1955. Inherited defects in dogs. Vet Rec. 67:15.