Praca oryginalna *Original paper*

Dorsal perineal hernia in a bitch

MAREK GALANTY, TERESA MASTALERZ, BERNARD TUREK

Department of Clinical Sciences, Warsaw Agricultural University, ul. Nowoursynowska 151c, 02-766 Warsaw, Poland

Galanty M., Mastalerz T., Turek B.

Dorsal perineal hernia in a bitch

Summary

The paper describes a case of a dorsal type of perineal hernia in an 11-year-old bitch of the Yorkshire terrier breed. The hernia was situated between the levator ani muscle and the coccygeal muscle. The hernial sac contained small intestines and a small amount of the retroperitoneal fatty tissue. Additionally, both sided inguinal hernias and collapse of trachea were diagnosed in the dog. In the discussed case the perineal hernia was operated on by the means of placing sutures on the levator ani muscle and the coccygeal muscle. No recurrence of the problem was observed during 19 months following the surgery.

Keywords: dog, bitch, perineal hernia

The perineal hernia has been determined in various species. Most often, however, it occurs in dogs. In this species it is most often diagnosed in males, with reports on hernias in bitches being relatively rare. Hayes (5) reports that in a population of 771 affected animals, the disease was noted in 19 non-spayed and 2 spayed bitches (2.7%). Petit (10) and Hosgood (6) observed this disease even less often: in 2.4% and 2.0% of an examined population. Single cases of perineal hernias in bitches are reported by Sandwitch (13), Dorn (3), Niles and Wiliams (9). Desai (2) demonstrated that the pelvic diaphragm in bitches is stronger than in male dogs. He observed that as compared to male dogs bitches have a stronger sacrotuberal ligament and a longer and stronger levator ani muscle. These factors are responsible for the fact that perineal hernias are more rarely observed in bitches than in male dogs.

Dorn et al. (3) describes 4 types of perineal hernias depending on the location of the hernia rings: sciatic hernia, dorsal hernia, caudal hernia and ventral hernia. Sciatic hernia is situated between the sacrotuberal ligament and the coccygeal muscle. Dorsal hernia is located between the levator ani muscle and the coccygeal muscle. Caudal hernia is situated between the sphincter muscle, levator ani muscle and internal obturator muscle. Ventral hernia is very rarely observed and described in bitches, but if it occurs, it is situated ventrally to the ischiourethral muscle, between the bulbocavernous muscle and the ischiocavernous muscle. The most frequently observed type of hernia in dogs is the caudal hernia. The dorsal hernia is a rare type of hernia (7). In the accessible literature there are reports concerning the appearance of this type of hernia exclusively in male dogs (3, 11, 15).

Case report

A female dog of Yorkshire terrier breed aged about 11 years, of 1.4 kg body weight, was brought to the Small Animal Clinic, Faculty of Veterinary Medicine, Warsaw Agricultural University. The cause for the visit was a gradually increasing deformation of the left perineal region that had been visible for two years and an increased tenesmus observed during the previous month. From the medical history of the patient, it was known that the bitch had been adopted by the owner at the age of 4.5 years and has been owned for 7 years. For the entire period the owners had observed the hyperexcitability of the dog, fatigability, choking, wheezing and periodical breathing difficulties. After being taken by the present owners (7 years), the bitch had not been pregnant, nor had any difficulties in passing urine been observed.

During clinical examination the dog was overexcited. Body temperature, taken rectally, was 39.0°C, pulse 110/min, capillary time over 2 sec. Oral mucosa was dark red, conjunctivas grayish pink. An intensive reflex cough appeared during the palpation of larynx. Increased respiratory murmurs were noted over the trachea and cranial lung fields during auscultation. Clear mixed breathlessness with the increased work of the abdominal press was observed. During palpation of the left perineal region an extensive (fig. 1), soft reduction of the deformation with clear fascicular structures of various consistence was observed. Rectal and vaginal examination did not reveal any lesions of the rectum or vagina. Additionally in the right and left inguinal region the observed reductions of soft tissue deformations were of about 5 and 3 cm in size. After the reduction of hernia contents enlarged inguinal canals could be noted.

Total haematoscopy revealed the following: red blood cells – 6.11 T/l; haemoglobin – 6.95 mmol/l; haematocrit –

Fig. 1. Abdominal position of the dog for surgery with the perineum exposed. Deformation of the left side of the perineal region is clearly visible

0.371 l/l; as well as slight anisocytosis, polychromasia and oligochromaemia. The leucocyte number was 10.1 G/l. The leucogram was as follows: rod neutrophilic granulocytes – 2; segmented neutrophilic granulocytes – 73; eosinophilicgranulocytes – 2; lymphocytes – 18; monocytes – 5. The erythrocyte sedimentation rate – 3 mm after one hour.

The activity of the alanine aminotransferase amounted to 36 U/l, aspartate aminotransferase – 34.6 U/l and alkaline phosphatase 58.1 U/l. The urea concentration in the blood serum was 7.1 mmol/l, creatinine – 131.6 micromol/l, total bilirubine – 2.8 micromol/l.

The total urine analysis indicated no deviation from the standard. Electrocardiographic investigation showed the overloading of the left heart ventricle. The X-ray-TV investigation of the neck and chest indicated the collapse of the trachea in the last segment of the neck and chest and the enlargement of the heart silhouette.

On the basis of the performed examination both sided inguinal hernias and left sided perineal hernia were diagnosed. Considering the state of the patient it was decided to operate the perineal hernia first and subsequently the inguinal hernias. Atropin (Atropinum sulfuricum – Polfa) 0.01 mg/kg, butorphanol (Butomidor – Richter Pharma AG) 0.1 mg/kg and medetomidine (Domitor – Pfizer) 0.01 mg/kg were used for the premedication. After pharmacological sedation an intravenous approach was made and an induction with barbiturate (Tiopental – Biochemie GmbH, Kundl-Rausko, Austria) 0.5 mg/kg was performed. After performing the endotracheal intubation, the patient was connected to the apparatus for inhalation anaesthesia continuing the anaesthesia with halothane steam (Narkotan – Leciva). During anaesthesia drip infusion with physiological salt – 35 ml/kg/h (0.9% NaCl – Polfa) and phentanyl (Fentanyl – Polfa) at a dose of 0.020 mg/kg was performed.

During the surgery a perineal hernia situated between the levator ani muscle and the coccygeal muscle was revealed (fig. 2). The muscles of the pelvic diaphragm were poorly expressed. The hernia contents included small intestines and a small amount of the retroperitoneal fatty tissue (fig. 3). After the cranial reduction of the hernia, the ring of hernia was closed with 6 interrupted loop sutures between the levator ani muscle and the coccygeal muscle. To close the hernia, the thread of polyglycolic acid of 2-0 thickness (Dexon-Davis and Geck) was used. Subcutaneous fascia and subcutaneous tissue were sutured with continuous tension suture using thread of the polyglycolic acid of 3-0 thickness, and the skin was sutured with loop sutures using the monofilament polyamide thread of 2-0 in thickness (Amifil M – Sinpo Poznań). At the end of surgery the dog was given an intramuscular injection of 20 mg tramadol hydrochloride (Poltram – Pharma). The dog regained consciousness spontaneously, without stimulation.

After the surgery the bitch was administered lincomycin at a dose of 10 mg/kg and spectynomycin at a dose of 20 mg/kg (Linco-Spectin-Pharmacia Belgium). The postoperative wound healed by primary intention. During the postoperative period no complications were noted. The postoperative control at the 6th month after the surgery and verbal information from the owner at the 19th month after the surgery showed no recurrence of the perineal hernia.

Histopathological examination of the segment of the levator ani muscle did not show any traits of atrophy or degenerative changes in the muscle fibers.

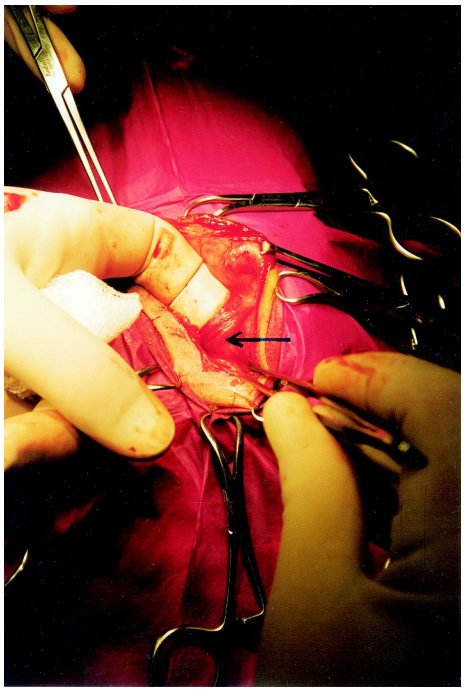

Fig. 2. The exposed levator ani muscle (elevated with a finger), the anal sphincter muscle (arrow)

Fig. 3. Small intestines contained in the hernial sac

Discussion

The described case is interesting not only because of its occurrence in a bitch, but also because of the situation of the ring of the hernia and its contents. The observed

situation of the hernia between the levator ani muscle and the coccygeal muscle has only been observed in male dogs to date (3, 11, 15). No description of such a type of hernia in bitches has been found in the accessible veterinary literature.

Dorn et al. (3) reports that the contents of dorsal hernias is usually the retroperitoneal fatty tissue; in our case, however, the presence of small intestines was also found. Such content of a hernia is also relatively rarely observed even in other types of hernias in male dogs (7). Galanty (4) observed such contents in 1.4% and Bellenger (1) in 2.9% of treated dogs. Although the muscles of the pelvic diaphragm were relatively weak, they were strong enough to close the hernia without the need of applying methods consisting in muscle transposition. Similarly Dorn et al. (3) presents the opinion that in dorsal perineal hernia it is enough to put the sutures between the coccygeal muscle and the levator ani muscle. In the described case it is difficult to establish the cause of the perineal hernia. It should be assumed that it had not occurred because of the increased tenesmus, as it appeared in the last period of the illness. No inflammatory states of urinary bladder, diarrheas or lesions in the perineal sinuses (which could cause increased tenesmus) were observed in the bitch (12). Niles and Wiliams (9) describe a case of the sciatic perineal hernia in a bitch in which the possible cause was the tenesmus during two prolonged parturitions. In the described case the bitch had not given birth in the last 7 years. Thus it should be stated that the above factor also was not the possible cause. Probably the occurrence of the disease was caused by the breathing disturbances resulting from the collapse of trachea. In the described bitch together with the perineal hernia also both sided inguinal hernias were observed. Shahar et al. (14) looks for a connection between the occurrence of perineal hernia and inguinal hernias in male dogs. This author suspects a common pathogenesis in the occurrence of these hernias but it should be mentioned that he refers only to male dogs in which the inguinal hernias are seldom observed. Niebauer et al. (8) presents the opinion that the appearance of a perineal hernia results from relaxine (a hormone produced by the prostate in male dogs) causing the relaxation of the pelvic muscles. It is possible that similar mechanisms could affect the occurrence of both the inguinal and perineal hernias in the described case of a bitch.

Summing up, it should be accepted that the perineal hernia situated between the levator ani muscle and the coccygeal muscle may also occur in bitches. In this type of hernia it is enough to stitch the ring of the hernia by bringing the levator ani muscle and the coccygeal muscle nearer.

References

1. *Bellenger C. R.*: Perineal hernia in dogs. Aust. Vet. J. 1980, 56, 434-438.
2. *Desai R.*: An anatomical study of the canine male and female pelvic diaphragm and the effect of testosterone on the status of levator ani of male dogs. J. Am. Anim. Hosp. Assoc. 1982, 18, 195-202.
3. *Dorn A. S., Cartee R. E., Richardson D. C.*: A preliminary comparison of perineal hernia in the dog and man. J. Am. Anim. Hosp. Assoc. 1982, 18, 624-632.
4. *Galanty M.*: Badania nad występowaniem i skutecznością leczenia operacyjnego przepukliny przepony miednicy i uchyłków odbytnicy u psów z wykorzystaniem biomateriałów. Treatises and Monographs. Publications of Warsaw Agricultural University 2003.
5. *Hayes H. M., Wilson G. P., Tarone R. E.*: The epidemiologic features of perineal hernia in 771 dogs. J. Am. Anim. Hosp. Assoc. 1978, 14, 703-707.
6. *Hosgood G., Hedlung Ch. S., Pechman R. D., Dean P. W.*: Perineal herniorrhaphy: Perioperative data from 100 dogs. J. Amer. Anim. Hosp. Assoc. 1995, 31, 331-342.
7. *Mann F. A.*: Perineal herniation, [in:] Disease Mechanisms in Small Animal Surgery. Second ed. Edit. Bojrab M. J. Lea&Febiger, Philadelphia 1993, 92-97.
8. *Niebauer G. W.*: Relaxin and canine perineal hernia – preliminary data and a new pathogenic hypothesis. Vet. Surgery. 1996, 25, 263.
9. *Niles J. D., Williams J. M.*: Perineal hernia with bladder retroflexion in a female cocker spaniel. J. Small Anim. Pract. 1999, 40, 92-94.
10. *Petit G. D.*: Perineal hernia in the dog. Cornell Vet. 1962, 52, 261-279.
11. *Raffan P. J.*: A new surgical technique for repair of perineal hernias in the dog. J. Small Anim. Pract. 1993, 34, 13-19.
12. *Rochat M. C., Mann F. A.*: Sciatic perineal hernia in two dogs. J. Small Anim. Pract. 1998, 39, 240-243.
13. *Sandwitch D. J.*: Perineal hernia in the bitch. Vet. Rec. 1976, 99, 18-20.
14. *Shahar R., Shamir M. H., Niebauer G. W., Johnston D. E.*: A possible association between acquired nontraumatic inguinal and perineal hernia in adult male dogs. Can. Vet. J. 1996, 37, 614-616.
15. *Spruel J. S. A., Frankland A. L.*: Transplanting the superficial gluteal muscle in the treatment of perineal hernia and flexure of the rectum in the dog. J. Small Anim. Pract. 1980, 21, 265-278.

Author's address: Dr Marek Galanty, Department of Clinical Sciences, Warsaw Agricultural University, ul. Nowoursynowska 151c, 02-766 Warsaw, Poland; e-mail: marek_galanty@sggw.pl