Treatment of bilateral hip luxation in dogs with the Shani-Johnston-Shahar technique: case report

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SUMMARY

The Shani-Johnston-Shahar technique, described in the present study, was performed in 8 dogs exhibiting bilateral coxofemoral luxation. Twenty weeks after surgery, a complete recovery based on physical and radiographic examinations was achieved in 7/8 dogs whereas the recurrence of hip luxation was noted 3 days after in the last one. These results clearly demonstrate that this easy and quick technique can be successfully indicated in the treatment of bilateral hip luxation in the dog compared to other classical techniques.

Keywords: Bilateral coxofemoral luxation, dog, Shani-Johnston-Shahar technique, recovery.

Material and Methods

ANIMALS

Between 2005-2011, surgical treatment using the Shani-Johnston-Shahar technique was performed among 8 dogs (3 mix-breed, 2 rattlers, 1 whippet, 1 Shetland Sheppard dog and 1 middle schnauzer), 2-5 years old, weighing 3 to 19 kg, exhibiting bilateral hip luxation. For all dogs, physical and orthopaedic examinations were performed. After premedication with xylazine (VetaXyl, Vetagro, Poland, 1 mg/kg, intramuscularly) radiographic examination of both hips on ventro-dorsal and lateral positions were performed. Based on these examinations, unilateral cranio-dorsal coxofemoral luxation per hip was diagnosed in all cases (figure 1). Besides, no arthritic changes were observed on the luxated joints. Duration between injury and surgery lasted from 5 to 21 days.

SURGICAL PROCEDURE

Antibiotic (Ceporex; Schering-Plough, Great Britain, 18 mg/kg, intramuscularly) and analgesic agent (Tolfedine 4%, Vetoquinol, France, 4 mg/kg, subcutaneously) were given to dogs one hour before surgery. Thereafter, dogs received 0.1 mg/kg ace

acylprozamine maleinate (Calmivet; Vetoquinol, France) and buprenorphinum 0.02 mg/kg (Bunoodol; Polfa, Poland) intramuscularly. Anaesthesia was initiated with a combination of 2 mg/kg xylazine (Rometar; SPOFA, Czech) intramuscularly.
and 5 mg/kg ketamine (Narkamon; SPOFA, Czech) intravenously. General anaesthesia was induced with halothane (Nar-
cotan; Lečiva, Czech) at a concentration of 2% administered with oxygen as a carrier. Inhalation anaesthesia was maintained in a half-closed system with a circumferential flow of gases.

After aseptic preparation of the treated area, hip joint was approached by a cranio-lateral area in dogs on lateral recum-
bency. After removing blood clots and fibrous tissue from the acetabular cavity and remnants of the round ligament of the femoral head, luxated joint was reduced. After joint reduction the joint capsule was sutured with a simple interrupted 3-0 polyamide monofilament suture material (Dafilon, B/Braun, Deutschland). A hole (1.5 mm) was drilled in the dorsal part of the greater trochanter of the femur in cranial direction. A hypodermic needle 18G was passed through the hole and strand of 0 polyamide monofilament suture material (Dafilon, B/Braun, Deutschland) was passed. Suture material was sub-
sequently passed beneath the origin of the rectus femoris muscle, and ends of polyamide material were tied in a figure-of-eight pattern. During suturing, the operated leg was held in abduc-
tion and internally rotated position [6]. The soft tissues and skin were sutured in routine manner. Similar procedures were performed on opposite joint. In each case post operative ra-
diographic examination was done and physical activity was restricted for three weeks. Additionally, antibiotic (Ceporex; Schering-Plough, Great Britain, 18 mg/kg, intramuscularly) and analgesic agent (Meloxam; Polfa Warszawa, Poland, 0.2 mg/kg, orally) were administered for ten days.

Results

Trauma was the main cause of hips luxation for all investigat-
gated dogs. There were no dysplastic hips in treated dogs.

On clinical examination performed 16 - 20 weeks postope-
ratively, seven dogs were found to be sound and able to walk and trot. Physical examination did not reveal evidence of re-
luxation. Radiographic examinations were performed in this same time, and no arthritic changes were observed (figure 2). Moreover, no sign of recurrence of hip luxation was reported by the owners during 12 months follow up. In only one mix-
breed dog relaxation of both hips was noted at the 3rd day after surgery. In this case bilateral resection arthroplasty was per-
formed.

Discussion

Generally two treatment types, closed and open, were pro-
posed for coxofemoral luxation in dogs [1, 2, 7]. The closed technique has to be performed within 72 hours after trauma, and hip reduction must be performed under general anaesthesia [2, 8]. Open reduction techniques are divided on intra-articular and extra-articular procedures. Intra-articular techniques in-
clude toggle pin, triple pelvic osteotomy, trochanteric pinning excision arthroplasty [1, 3, 5, 8]. Extra-articular stabilization include techniques using non-absorbable suture materials. In this procedure material is attached to the great trochanter and
to various places in the pelvis, depending on the surgical method [2, 6].

There is no one ideal surgical way of treatment for traumatic coxofemoral dislocation in dogs. Almost each of surgical procedures has complications and drawbacks. They can result from the operation technique, time of operation and used materials. In Shani-Johnston-Shahar technique, the time of operation is very short, the technique is very simple, less invasive, and the monofilament non-absorbable suture material used in this study did not stimulate sinus formation, which are encountered in others methods [6]. In comparisons with other techniques, especially in which non-absorbable sutures materials are applied, wide exposure to ilium is imperative and has to be done. Described procedure used the origin of the rectus femoris muscle as an anchoring point. To gain this anatomical structure, there is no need to make wide approach, and surgical procedures can be easily combined with access to greater trochanter of the femur. Besides in presented technique there is no need to create tunnels or put screws in the ilium, and thereby increase possibilities for additional complications.

In the present study, bilateral coxofemoral luxations in 8 dogs were treated with the Shani-Johnston-Shahar surgical technique, which is easy and quick. Based on a 12 months clinical follow up, the cure rate reached 87.5%; 7 dogs out of 8 recovered a good functional mobility of each treated limb with no recurrence or arthritic complications.

Based on of the presented study of 8 cases, it can be ascertained that described surgical procedure by Shani-Johnston-Shahar appears to be effective method for the treatment of bilateral hip dislocation in dogs.

References