

## Juvenile Pubic Symphysiodesis: Is this Dog a Good Candidate?

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A 20-week-old, 24-kg, intact male German shepherd was referred to the University of Florida Veterinary Medical Center for hip evaluation.

**History.** Hip joint instability had been detected by the referring veterinarian (severe positive Ortolani signs bilaterally) before referral.

**Physical Examination.** On physical examination, a positive Ortolani sign was detected in both the right and left hip joints. Mild crepitus was detected in the right hip joint. No discomfort was noted during hip manipulation, and there was no evidence of hindlimb lameness.

**Laboratory Results.** Packed cell volume was 40%, total serum protein level was 5.8 g/dl, and BUN was estimated to be between 5 and 15 mg/dl.

**Radiographs.** Ventrodorsal hindlimb extended radiographs showed bilateral moderate-to-severe subluxation of the coxofemoral joints consistent with canine hip dysplasia (**Figure 1**). Faint lines of osteophyte formation were visible on both femoral necks.

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### ASK YOURSELF ...

Would JPS be likely to resolve the subluxation in this dog?

- A. No. JPS should only be performed in dogs that are skeletally mature.
- B. Yes. JPS corrects subluxation regardless of severity.
- C. No. The weight of the dog exceeds the range recommended for the procedure.
- D. No. The degree of subluxation is too severe.
- E. Yes. The femoral neck angles are low.

JPS = juvenile pubic symphysiodesis

## INSIGHTS FROM CLINICAL CASES . DISCUSSION

### Correct Answer: D

**No. The degree of subluxation is too severe.**

According to the literature, the best candidates for JPS are dogs that are between the ages of 12 and 20 weeks that have only mild-to-moderate hip joint instability as assessed by palpation methods (ie, small angles of femoral head reduction measured during the Ortolani test), standard hip radiography, and stress radiographic methods.<sup>1</sup> In the case discussed here, JPS was done; however, the degree of subluxation was too severe for the procedure to allow “capture” of the femoral heads by the acetabulae, and osteoarthritis progressed substantially after surgery.

**Case Management.** Two months after JPS was done, the dog was reexamined at the UF VMC. On physical examination, positive Ortolani signs were still present; radiographs showed unchanged subluxation of the femoral heads and early evidence of osteoarthritis (**Figure 2**). Triple pelvic osteotomy was offered at that time but the owner declined. One year later the hips were again evaluated. Physical examination at this time revealed crepitus in each hip, pain on manipulation, and mild right hindlimb lameness. Radiographs of the hips showed substantial progression of the osteoarthritis on both sides (**Figure 3**). No further surgery was performed, and the owner elected to manage the condition medically. During a follow-up telephone conversation 7 years later, the owner reported that the dog was functioning well and was being treated only with chondroprotective agents.

**Discussion.** Because this case was seen before candidacy guidelines had been established (ie, 1999), JPS was recommended and surgery was performed. Today, most orthopedic surgeons would be hesitant to recommend JPS in such cases.

It is possible that the dog in this report did derive some benefit from the JPS procedure because he is still functioning well at 8 years of age. However, given the lack of improvement in the degree of subluxation on the 2-month follow-up radiographs, persistence of positive Ortolani signs, and the severity of the degenerative changes on the 1-year follow-up radiographs, the possibility of clinical benefit from JPS in this case must be questioned.

The degree of acetabular rotation expected to be induced by JPS for each hip is between 10° if the procedure is done when the patient is 15 weeks of age and 7.5° if the procedure is done at 20 weeks.<sup>2</sup> Theoretically, it is best to operate on more severe cases earlier in the course of the disease (eg, 12 to 16 weeks vs > 20 weeks of age), thereby allowing more time for acetabular



**AT PRESENTATION**  
Ventrodorsal radiograph of a 20-week-old German shepherd showing bilateral hip joint subluxation.

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### TAKE-HOME MESSAGES

- Dogs with mild to moderate hip joint instability and no radiographic evidence of osteoarthritis would be expected to receive the most benefit from a procedure like JPS.
- There is still some controversy about the clinical efficacy of JPS. While dogs with mild to moderate hip instability are considered the best candidates, this population often does well without surgical intervention.
- According to the literature, the best candidates for JPS are dogs between the ages of 12 and 20 weeks that have only mild to moderate hip joint instability as assessed by palpation and stress radiographic methods.
- Performing JPS on younger dogs should theoretically have a better outcome because it allows more time for acetabular rotation during pelvic growth.



**2 MONTHS POSTOPERATIVE**

Ventrodorsal radiograph of the same dog as in Figure 1 two months after JPS. Note the lack of improvement in the degree of hip joint subluxation.



**1 YEAR POSTOPERATIVE**

Ventrodorsal radiographic projection of the same dog 1 year after JPS. Note the degree of worsening of the secondary osteoarthritis.

rotation during pelvic growth.<sup>3</sup> In one report, the degree of acetabular rotation for a dog treated with JPS at 24 weeks was only 6°. The dog in this report was just slightly older than the upper recommended limit of 20 weeks. For triple pelvic osteotomy, 20° of rotation has been recommended for each hip joint.<sup>4</sup> ■

See Aids & Resources, back page, for references, contacts, and appendices.



at a glance

- JPS should be used to treat hip subluxation in dogs between 12 and 20 weeks of age with mild-to-moderate hip joint instability as assessed by palpation and stress radiographic methods.
- Medical management usually consists of a combination of nonsteroidal antiinflammatory drugs and chondroprotective agents.