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# CANINE HIP DYSPLASIA

## JUVENILE PUBIC SYMPHYSECTOMY

### (JPS)

#### Introduction

JPS is a treatment option for canine hip dysplasia (CHD). Please refer to CHD pamphlet, also available on this site, for more detail before considering specific treatment options.

JPS is a relatively recent development in the arsenal of treatment options available for CHD. The aim of JPS is to create a deeper socket (acetabulum) to improve the hip joints stability.

It was first proposed in 1996 and has been undergoing research and development since this time. So far the results appear to be very promising with hip laxity improving when assessed for Ortolani sign and with PennHip® assessment. It should always be remembered that CHD is primarily a disease of hip laxity, and it is this laxity which results in damage to the soft tissues around the joint and development of osteoarthritis within the joint which cause the pain and dysfunction associated with CHD. In juvenile dogs a portion of the socket is made up of cartilage which only turns to bone as the animal matures (around 10 months of age). This soft cartilage is easily damaged as the ball (femur head) pops in and out of the socket (Fig.3).

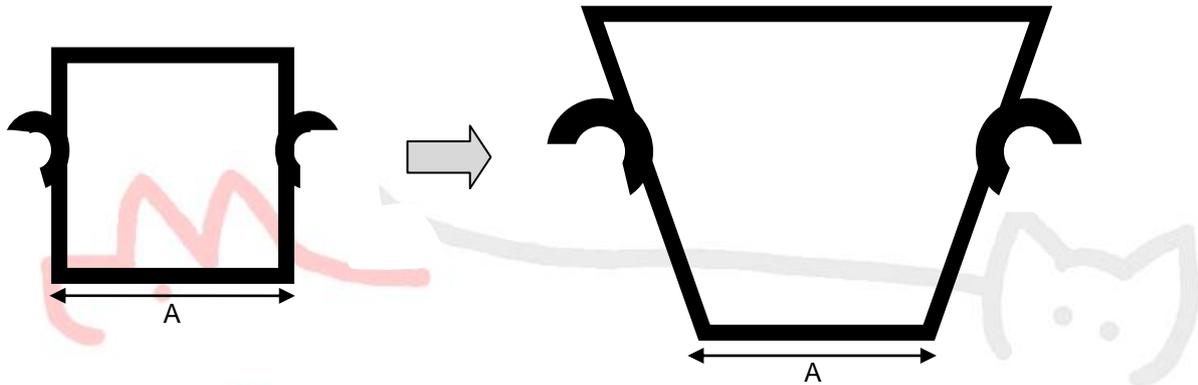
Age of identification of CHD is critical with JPS as it is generally performed on animals between **14-20 weeks of age**. Every weeks delay through this window of opportunity will reduce the amount of rotation to the socket that can be achieved (Fig.1 & 2). Therefore **early assessment of the hips should be considered in at risk animals**. This assessment will involve your animal being either sedated or anaesthetized to have their hips thoroughly assessed by a clinician familiar with the early assessment of canine hips, and may involve the need for specific X-rays in animals found to have suspect hips on the clinical examination.

This early assessment is **critical in selecting appropriate dogs for surgery** as every juvenile CHD case is not an ideal candidate for JPS. Selection of inappropriate cases may result in performing surgery on cases which are at a low risk of developing clinical CHD within their life time, or may result in performing JPS on animals with a level of CHD which may be more successfully treated with other options such as conservative treatment, juvenile pubic symphysectomy, double or triple pelvic osteotomy.

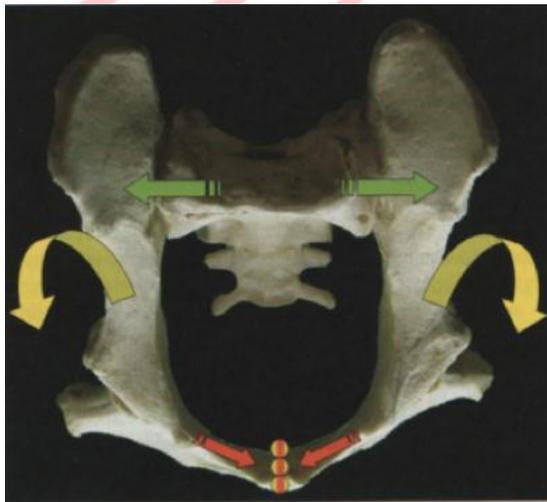
## JPS Surgery

JPS is potentially one of the least invasive and most cost effective surgeries available for the treatment of CHD.

It involves destruction of a portion of the growth plate in the bottom of the pelvis thereby slowing the growth of the bottom of the pelvis. If you think of the pelvis as a box, when you stop the bottom of the box growing but allow the walls and roof to continue, then the walls will tilt outwards as the roof grows but the bottom does not (Fig.1).



**Figure 1.** Graphical representation of the effect of JPS on the growth of the pelvis. A = Floor of the pelvis where the surgery has stopped ongoing growth. The roof and walls continue to grow, resulting in an outward tilt of the walls.



**Figure 2.** The effect of a JPS is shown on the pelvic bones. Green arrows show the ongoing expansion in the sacrum (roof of the pelvis). Red arrows and line represent the cessation of growth in the pubic symphysis (floor of the pelvis). Yellow arrows show the effective rotation that occurs on the acetabulum (socket) which results in a deeper socket for the femur head (ball) to sit in.

As can be appreciated the amount of growth left in the pelvis is critical to determining the amount of rotation which can be achieved with the socket. The earlier the surgery is done then the greater the amount of rotation which can be achieved. Care must be taken to protect surrounding structures during surgery such as nerves and the urinary tract as damage to these may be catastrophic. With appropriate care the risk of damage to these structures is very low.

If a JPS is performed then the dog will need to be desexed (spayed, castrated / vasectomised) at the same time to prevent them breeding and therefore spreading hip dysplasia genes to future generations. There is also an increased risk of dystocia (getting pups stuck during birth) in the bitch after JPS.

## Postoperative Care

Most animals make an uneventful recovery. They should be rested for 10 days after surgery just as for a castration or spay. If they are too active some animals may develop a seroma (fluid filled swelling) at the surgical site. If this occurs they will usually be managed conservatively with further strict rest for a period of time.

Your dog will have pain relief dispensed for a period as would occur for any spay or neuter, however the drugs may be continued for a slightly longer period of time.

If external skin sutures are present they will need to be removed 10-14 days after surgery.

The conformation of the hips immediately after surgery is exactly the same as before the surgery, as it relies on further growth to slowly correct the hip joints over time. Therefore it is important to appreciate that your dog will need to have strict exercise management until they are around 10-12 months of age when the bones mature to some degree. Exercises that should be avoided include anything that will place an excessive force on the hip joint resulting in the ball being ripped in and out of the socket. This will damage the soft edge of the socket that we are waiting to rotate over the top of the ball as the pelvis grows. For example sudden acceleration, jumping, twisting and hard cornering should be avoided.

Walking, controlled running, swimming and wading in water should be promoted as they will help to maintain the muscles around the hip joint which serve an important role in stabilizing the hip joint.

If appropriate exercise management cannot be instituted after surgery then there is a higher risk that this surgery will not provide the desired end result.

## Summary for JPS

- Assess the hips of at risk breeds as early as possible (14-16 weeks of age).
- Surgery is performed at 14-20 weeks of age. After this age there is not enough growth left in the pelvis to allow for the surgery to work.
- Careful assessment and selection of appropriate animals and owners is critical for surgery to be successful.
- Least invasive and least expensive surgical option available for treatment of CHD.
- Postoperative recovery is usually uneventful.
- Ongoing exercise management until 10-12 months of age is critical to maximize the chance of a successful surgery.
- Other drugs, physiotherapy programmes and treatment options may be used concurrently with JPS.
- JPS does not interfere with the ability to perform other medical or surgical treatments of CHD if they are needed.

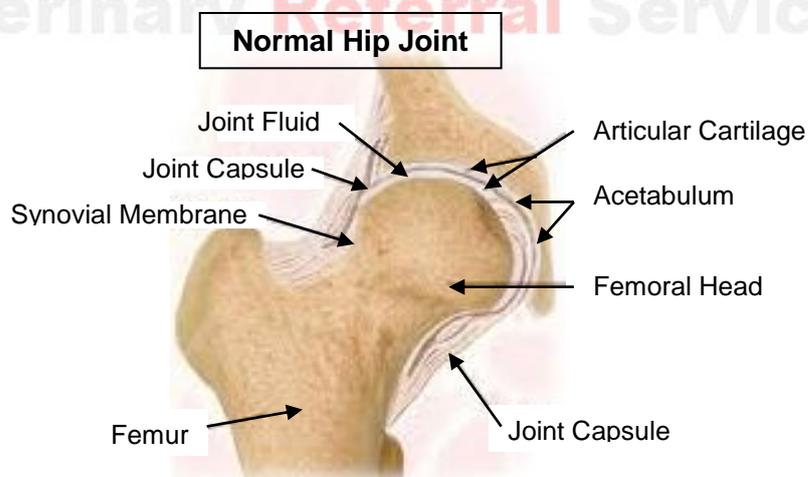


Figure 3