

Case study: Conservative Manual Chiropractic Management of a Recurrent Medial Luxating Patella in a Dog

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ABSTRACT: *Objective:* The intended purpose of presenting this case is to report the favorable outcome of manual therapeutic intervention in a case of grade 2 recurrent medial luxating patella in a dog. *Procedure:* The dog, a Pomeranian companion animal, was presented with a right recurrent grade 1-2 luxating patella with a history and subsequent surgical correction of a similar presentation in the left. The dog was found to most notably have restriction in the sacro-iliac joint and hypertonic *sartorius* and *psoas* muscles ipsilateral to the involved patella. The dog was given chiropractic adjustments to the restricted joints and myofascial release was applied to the named muscles. *Results:* Response to treatment was favorable, lowering the incidence of luxation eventually to the point of absence and decreasing the level of the dog's disability. The duration of relief is however unknown. *Conclusion:* Management with manual therapeutic intervention may represent a cost effective and noninvasive solution to the management of recurrent luxating patella. Though similar findings would have to be found in other cases to warrant certainty.

INDEX TERMS: MeSH: CHIROPRACTIC. (Other):ANIMAL CHIROPRACTIC.

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INTRODUCTION

The intended purpose of presenting this case is to report the favourable outcome of manual therapeutic intervention in a case of grade 2 recurrent medial luxating patella in a dog. Also as an attempt to inspire further investigation and reporting of similar cases with the view to presenting such management as an efficient, effective, cost effective and noninvasive management for such conditions. With few practitioners specializing in this approach it may warrant referral to qualified Animal Chiropractors for such management. The current approaches of management¹ indicate that conservative manual management is in line with current thinking or at least the rationale, but is just underutilized perhaps in part because of the small number of qualified Animal Chiropractors or manual therapists. It is worth overtly noting that manual care is likely to have much less side-effects than surgical intervention for the same condition.

HISTORY

A 2-year old male Pomeranian presented with right hind lameness of approximately 1 year duration, most pronounced on prolonged walking. The symptoms are exhibited as a sudden flexion of the involved leg and reluctance to return to neutral. He was able to return the leg after a period of hours. The dog has a history of similar symptoms on the left and a

diagnosis of luxating patella was given. It had been treated with surgical stabilisation 6 months previous to chiropractic presentation, and seemed to be successful in removing the symptoms in that leg. The owner reports that at the time of surgery the right leg was not exhibiting any of the current symptoms. The owner was motivated to seek options such as manual therapy due to cost and perceived reduction in side effects *versus* surgery.

EXAMINATION

With the leg extended and the hip flexed, the patella was easily able to be medially luxated with little pressure. The dog would then hold the limb in a position suggested in the symptomatology. Following the Putnam² method of grading, the dog was given a grade of 2. Even though the patella could spontaneously reduce after a period, the symptoms most accurately describe a grade 2 and are also reflective of its recurrent nature. No comment can be made on the structural signs associated with patella luxation as no imaging studies were conducted. Functional signs, however, such as laxity of the stifle and instability of the patella were noted. Upon palpation hypertonic muscles were found, most notably the ipsilateral *sartorius* and *psoas*. These muscles also contained trigger points. Chiropractic examination of the joints involving motion palpation revealed a restriction/resistance to extension of the right sacro-iliac joint.

MANAGEMENT

At the first consultation a chiropractic adjustment (a specific short lever, high velocity, low amplitude thrust in the direction of restricted movement) was delivered to the involved sacro-iliac joint. Myofascial release techniques were used to address the trigger points and hyper tonicity for the *sartorius* and *psoas* muscles. This was repeated at 1

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week intervals for a total of 4 weeks. Since the listed regime of treatment the dog has not been re-presented.

RESULTS

The owner was asked to keep a diary of the occurrence, onset and duration of the symptoms (flexion of the right leg and reluctance to return to neutral.). The results of this are summarized as follows. 1st treatment: little change, 2nd treatment: 20min/1hr leg down, 3rd treatment: 40min/1hr leg down, 4th treatment: no symptoms exhibited on walking or at home. Upon each re-evaluation the patella was able to be luxated in the same manner as in the initial examination, though as one will see from the results this was not occurring as easily (onset was delayed on exacerbation) and finally was not occurring spontaneously. After this outcome the dog was not re-presented thus no data concerning long term relief were available.

DISCUSSION

The current methods of surgical intervention¹ do go some way to supporting the notion of soft tissue and manual therapy being a suitable management for some grades of patella luxation. By way of example the following techniques may be compared to the rationale of manual therapy.

Retinacular releasing incision- Designed to decrease the medial pull of the retinaculum and in particular the *sartorius* muscle.

Retinacular imbrications- An attempt to provide a lateral counter force to oppose a medial pull, *i.e.* in cases of relative lateral laxity or medial stiffness or hyper tonicity.

Alignment of the Quadriceps mechanism- Repositioning the line of pull of either the patella ligament or the origin of *rectus femoris* to alleviate an excess medial pull by either group or a normal pull in a genu varus (bow legged) limb.

Bony or soft tissue pathology is used as an indication for the above interventions.¹ These do not however include such functional guidelines such as the presence of Trigger Points (TrP), biomechanical dysfunction, facilitation or inhibition of surrounding muscles or those involved in a kinetic chain (seen in postural dysfunction). Many of the above rationales for surgery would also be the rationale for soft tissue or manual therapy.

Mention is made within the guidelines for the above interventions, as well as those for grade 3-4 patella luxation (including osseous surgery) of the presence of internal rotation of the tibia relative to the femur. There was however, no mention found of pronation in the canine hind limb (sciencedirect.com; canine AND Pronation, all sources). In humans this is where the foot “rolls” medially. It represents a complex postural derangement at the tarsal-metatarsal and/or the tibio-tarsal joints. It is also accompanied by a degree of medial tibial rotation for every degree of pronation.³ Considering a great many dogs are subjected to the same rigid surfaces as are humans (concrete, paving, roads etc) it does not seem out of the realms of possibility that they may be affected by a recurrent soft tissue insult in a similar manner.

A management regime involving only anti-inflammatory medication or protocols and rest may lead to de-conditioning. The body changes and adapts to stimuli. Should that stimulus be reduction of movement and loading over a prolonged period, it may result in muscular atrophy as well as soft tissue contraction and weakness.⁴ Pain may subside and this may be mistaken for resolution, but the dysfunctional tissue may still be present albeit in a more functional form, until it is appropriately stressed again. At that time, the original complaint, or one similar to it may reoccur. This is not to suggest that manual medical care has a 100% chance of resolving the condition without any chance of reoccurrence. The explanation is merely intended to describe the theory behind the application.

Mention is also made of the hope that rest will allow the patella to stabilize in a reduced position.¹ If there is formation of scar tissue due to a trauma that has occurred allowing the luxation to exist, and this tissue is formed in a rested or immobilized position then the formation of said tissue will in all likelihood be disorganised.⁴ So there again is suggestion that at least the approach of viewing this as a functional mechanical condition is worthy.

What of bony pathology? When the trochlear groove is so shallow as to allow luxation, does this imply that this dog MUST suffer from luxation? It warrants consideration that such a problem could have a functional and structural component and that when these exist together they summate to cause the clinical condition. Thus resolution of one may be enough to cause an at least partial resolution of the condition.

CONCLUSION

In this case of a 2-yr old male Pomeranian dog with grade 2 unilateral medial patella luxation, manual therapeutic intervention, including targeted specific soft tissue therapy and chiropractic adjustive procedures, attained a reduction then absence of presenting signs and symptoms.

In the case of Grade 2 patella luxation it would seem that such functional derangements as have been discussed would warrant attention. Attention to these and their management with manual therapeutic intervention may result in a cost effective and noninvasive solution to the management of recurrent luxating patella. Similar findings would have to be found in other cases to warrant certainty.

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