# ASSESSMENT OF THE PATELLAR GROOVE REPLACEMENT (PGR-KYON®) SURGICAL TECHNIQUE TO TREAT DOGS WITH PATELLAR LUXATION

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## INTRODUCTION

Patellar luxation is one of the most common causes of hind-limb lameness in dogs, affecting small (medial) and large breeds (lateral) and it is classified in grades I-IV. Recently, a new surgical technique, called **Patellar Groove Replacement (PGR),** has begun to be implemented to treat patellar luxation. This technique deals with femoro-patellar instability caused by patellar luxation associated with osteoarthritis (OA) or with serious anatomical abnormalities in the patellar groove. These two characteristics limit the use of classical techniques, such as deepening of the trochlear groove or tibial tuberosity transposition (TTT). To implement PGR technique, it is used a prosthesis, brand KYON AG[1].

## OBJECTIVE

The main objective is **to assess whether the surgical technique of Patellar Groove Replacement (PGR-KYON®) is a good method for treating patella luxation in dogs** by comparing 3 clinical cases**.**

## MATERIAL & METHODS

**Table 1:** Material and methods.

| | Case A | Case B | Case C |
|---|---|---|---|
| **Anamnesis** | One-year-old Poodle female. | Five-year-old X American Staffordshire spayed male. | Three-year-old X Hound male. |
| **Clinical history** | Lameness right hind-limb (RHL). | Lameness LHL. | Lameness RHL. |
| **Diagnosis** | Medial patellar luxation (I) left hind-limb (LHL). Lateral patellar luxation (IV) RHL. Absence of trochlea and tibial malformation RHL (Fig. 1). | Medial patellar luxation (IV) LHL. Anterior cruciate ligament rupture, OA, tibial malformation and absence of trochlea. | Lateral patellar luxation (II) LHL. Lateral patellar luxation (III) RHL. Absence of trochlea and tibial and femoral malformation in RHL and LHL. |
| **Treatment** | PGR-KYON® (1,5) and TTT in RHL (Fig. 2 and 3). | PGR-KYON® (6), TTT , imbrication and lateral tibio-fabellar suture in LHL. | PGR-KYON® (3) in RHL. |

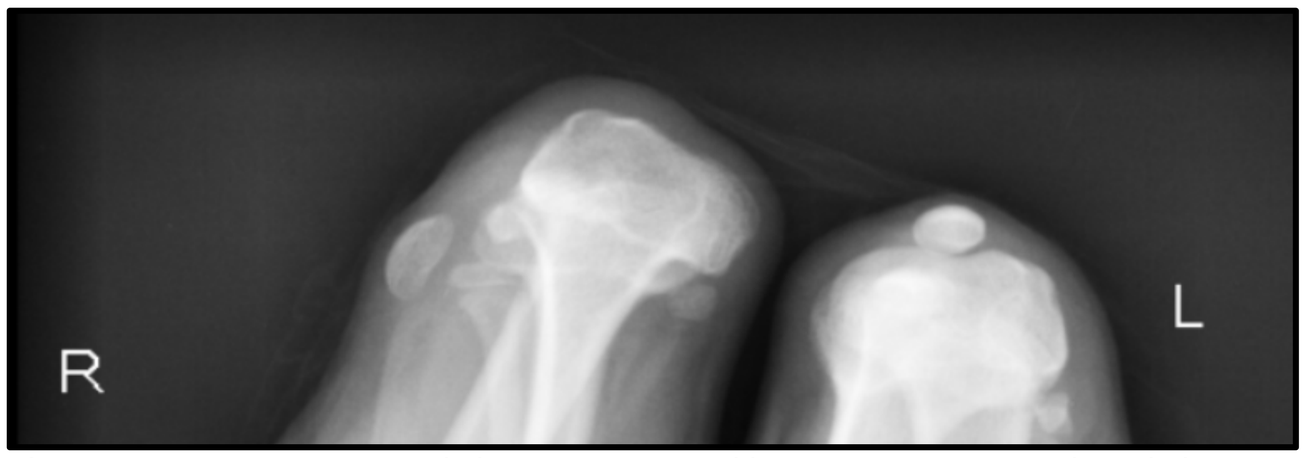


**Fig. 1:** Case A. Preoperative skyline X-Ray. Lateral luxation IV in RHL and medial luxation I in LHL..

**Fig. 2:** Case A. Intraoperative image of PGR technique.

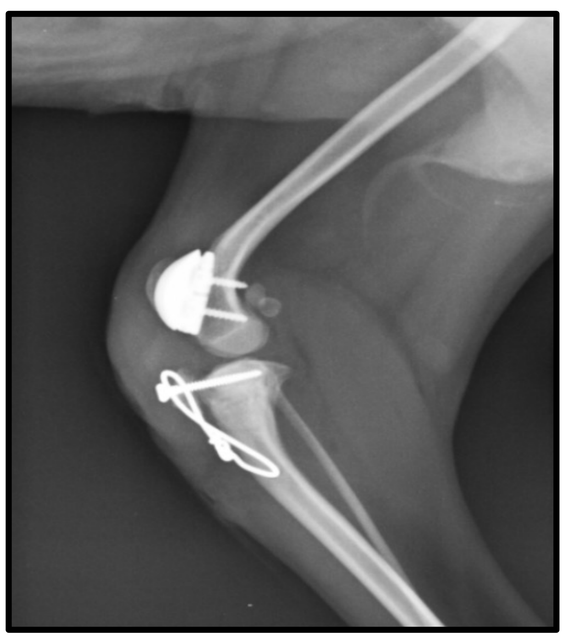

**Fig. 3:** Case A. Postoperative X-Ray. PGR-KYON® and TTT techniques.

## RESULTS

**Table 2:** Results.

| | Case A | Case B | Case C |
|---|---|---|---|
| **Complications** | Avulsion of the tibial tuberosity (PGR-KYON® + TTT) | _____ | _____ |
| **Evolution** | Good (3 mths.) | Good (5 mths.) | Good (1 mths.) |

## DISCUSSION

- Three different clinical presentations and different treatments.
- Good outcome.
- PGR technique is a good alternative when there are anatomic abnormalities and degeneration.
- Postoperative treatment and revisions are important.
- Individual or with complementary techniques.
- Personalised treatment.
- Subjective and objective results.
- Limitations
  - Few studies. Dokic et al. (2015)[1].
  - Small population and short-term results.
  - Standardisation.

## CONCLUSIONS

- PGR-KYON® surgical technique is a good treatment for patellar luxation in dogs in the short term.
- A study with a larger population, standardised population and technique and with a long-term follow-up should be carried out.
- Anatomy is very important to choose this treatment.
- PGR-KYON® technique can be used individually or with complementary techniques.
- There are not enough studies to compare the results of this study.

1. Dokic, Z., Lorinson, D., Weigel, J. P., & Vezzoni, A. (2015). Patellar groove replacement in patellar Luxation with severe femoro-patellar osteoarthritis. *Veterinary and Comparative Orthopaedics and Traumatology*, *28*(2), 124–130. https://doi.org/10.3415/VCOT-14-07-0106