MENTORS IN ORTHOPEDICS

DIVE INTO THE DATA... FOR YOUR PATIENTS!

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SUMMARY

Background: Traditional orthopedic evaluation often prioritizes radiographic alignment and clinician-reported outcomes over patient-perceived success. However, a discrepancy frequently exists between technical surgical precision and postoperative patient satisfaction, particularly in total knee arthroplasty (TKA). While Patient-Reported Outcome Measures (PROMs) are increasingly utilized, their integration into daily clinical workflows remains inconsistent due to perceived administrative burdens and potential collection biases.

Objective: This article examines the utility of real-time, digital data collection platforms for monitoring PROMs and Clinician-Reported Outcome Measures (CROMs) to enhance clinical decision-making and improve the quality of orthopedic care.

Key Points: Analysis of data from a digital collection platform indicates high patient participation rates across all age groups, contradicting the assumption that elderly patients cannot navigate digital tools. Findings demonstrate a poor correlation between traditional scoring systems, such as the Knee Injury and Osteoarthritis Outcome Score (KOOS), and overall patient satisfaction. Furthermore, no significant correlation was observed between maximum knee flexion at one year and patient satisfaction levels. Data suggest that high pain intensity on the first postoperative day is a predictor for continued use of assistive devices at one month. Granular data collection allows for the optimization of postoperative follow-up schedules; for instance, identifying that TKA patients with less than 90° flexion at 21 days may require earlier intervention.

Conclusion: Implementing systematic, patient-led digital assessment tools facilitates a more objective understanding of subjective outcomes. By correlating PROMs with CROMs, surgeons can adapt clinical protocols, optimize analgesic strategies, and refine the timing of postoperative interventions to better align with patient needs.

KEYWORDS

Arthroplasty, Replacement, Knee; Patient Reported Outcome Measures; Recovery of Function; Pain, Postoperative; Data Collection

INTRODUCTION

For me, the joy of Maîtrise Orthopédique lies in the unconventional nature of what can be written and published there, yet it never fails to deliver high quality medical or surgical content (I won't use the term scientific, because we are not scientists). It is formed in the image of its creator, who I want to pay homage to once again, and without whom I would not be writing this "article".

Thank you, Levon Doursounian! (While I'm on the subject, check out his book "Chirurgiens de l'Hôtel-Dieu" [Surgeons of the Hôtel-Dieu Hospital]).

And as a non-scientist surgeon, my only aim in the lines that follow is to share some of my thoughts with you, in the hope that this will lead to discussions and responses.

Since Maîtrise Orthopédique has done me the honour of asking me to be profiled in this issue, and to showcase my keen interest in collecting and analysing data to improve the quality of patient management, I wanted to share my experience in data collection, as part of my daily routine, over the past six years. Through a few simple examples, I will try to show you the extent to which a daily dashboard of results reported by the patients themselves, updated in real time, can be a powerful tool that helps me to steer my practice, in terms of introducing changes or adaptations.

Firstly, being something of a devil's advocate, I notice that evaluating what we do every day, as a matter of routine, is not a deeply rooted concept in the culture of our surgeons.

Our publications normally analyse results against surgical criteria, imaging or a lack of complications rather than against patient satisfaction.

But is there a correlation between the quality of an x-ray showing a perfect total knee replacement and the deep satisfaction of a patient? I don't believe so!

Have you ever wanted to stash away an x-ray that doesn't fill you with pride, but you see that the patient is doing really well? I know I have!

For some years now, the English-speaking medical world has seen the term PROM (Patient-Reported Outcome Measures) flourishing, which means nothing more than the assessments we sometimes make when filling in "clinical scores". We have become swamped with scoring systems, and have often seen it as a chore or a waste of time asking these frequently repetitive questions to patients who are apprehensive about having to answer them during their appointment. It can't be a positive experience. This causes all the biases to add up: measurement, collection, interpretation and so on. And there are still more if it isn't done with hindsight, long after the intervention or the postoperative period.

These "unchanging" scores, of which there are so many examples, have often reached a threshold where they are no longer applicable to the current lifestyles of our patients.

But they often remain the only method of comparing different studies. It can be challenging to draw lessons from them that help us to develop the way we work on a day-to-day basis. They can also be limited in terms of the quality or quantity of data collected.

Yet who is better placed than the patient to evaluate their outcome? Perhaps the only question to ask a patient would be the following one: “Are you satisfied with the result of the surgical intervention you have had?”. This is the only thing that counts for the patient.

However, it is clear that for us, that is not enough. We need other criteria to try to correlate patient satisfaction, or lack thereof, with the results that we are used to measuring (degree of mobility, x-ray appearance, pain, and so on).

I have the impression that we are actually doing the opposite. We look at the x-rays, we expect patient satisfaction and yet, it doesn’t necessarily follow.

Think of all the patients who complain that they don’t feel understood when they report that they are in pain or suffering from a troublesome disability, and the surgeon responds, “the x-ray looks very good”. And that’s often the end of it!

Would we see so many “unforgotten joint replacements”, especially knees, if we had more subjective data, or if we listened more closely to our patients? Moreover, it is only in very rare cases, perhaps even never, that we understand why a patient remains aware of their joint replacement. This puts me in mind of the “idiopathic” diseases from my long-distant studies, which are not necessarily so mysterious today.

MEASURING

It is difficult to free up time during our daily practice to do something other than the tasks we are used to: seeing patients, giving information, managing, operating, paperwork and setting aside time for something other than the daily grind.

Measuring what we do would be sure to be quickly experienced as an additional burden, and yet another waste of time.

But, ultimately, we should delegate this task to the patient themselves, at least the aspects that are in their purview: are they in pain, are they able to resume a normal life, to drive, to go shopping, to work, to provide an assessment of their mobility?

It can’t be denied that they have the time, at least during recovery. Self-assessment will avoid certain types of bias, such as measurement and interpretation bias. A bias in terms of understanding could persist, but this can be resolved by a smart data collection tool that is accessible to the widest audience.

Another advantage is also that it can be done as often as the patient wishes, throughout their care pathway, with no additional effort.

There will be a much greater volume of data than if we wait to see them for their postoperative appointment (taking into account the various appointments and the operating time, on average a surgeon “sees” their patient for a total of 4 hours throughout their entire treatment. The patient, on the other hand, sees their surgeon for much less time, since these figures include the operation).

I know that interpretation is sometimes difficult, when this is highly subjective. In spite of this, self-assessment is the most objective tool for measuring this subjectivity. Is it any less subjective for taking a trip through the surgeon’s subjectivity? I doubt it (in fact, I’m sure it isn’t). We are not the most objective of creatures, especially

when it comes to discussing our results, and yet these are actually our patients' results. Or perhaps it's my result when it's good and the patient's result when it's not so good! Leaving berating aside, it must be acknowledged that there are some patients who don't do much to help achieve a good result.

This is why, in addition to PROMs, we also need CROMs (Clinician-Reported Outcome Measures). These are the "objective" criteria that we can measure, such as angles on x-rays or ranges of joint motion. We can't delegate this to the patient and it will take up our time, which is why it is worth automating or having agile tools that are easy to use.

It is also how we can look for correlations between PROMs and CROMs.

To take a simple example: A "good result" in a total knee replacement is considered to be reflected in the highest degree of flexion, so we investigated whether there was any significant correlation between flexion of the knee after TKR and the rate of overall patient satisfaction, 1 year after surgery. And guess what? There was no clear correlation.

This isn't easy to accept as we were raised with this belief. It was decided that flexing the knee to 120° was a better outcome than flexing it to 90°. It isn't that this is senseless, it just isn't necessarily true. I bet that like me you have examples of patients who can flex to 90°, and are satisfied, while others can flex to 130°, but they aren't happy. Which is more important? Flexion or satisfaction?

WHICH TOOL TO USE?

In fact, it doesn't really matter, as long as it is able to record the information we need to compare, analyse and improve our patients' results.

I will quickly tell you about the tool that I use, acknowledging that I have a major competing interest as I am one of the co-founders of Digikare, which publishes that data collection platform, Orthense. I don't wish this to be an "advertorial" for Orthense, but the fact is that it is thanks to this platform that we have been able to obtain the results that I will discuss a little further on.

Orthense is the product of our determination to improve the quality of care that we offer to our patients, and to bring the power of digital into our sector, where it is much less well established than in many others.

The qualities that we felt were essential when developing these tools were:

- It should be easy to use
- Minimum time would be wasted for the surgeon
- The time saved could be invested in our surgical routine
- The patient could assess their result themselves
- Data could be collected in real time
- The results and analyses would be visible in real time
- The results would be comparable
- Data could be shared
- It would be a tool for continuous improvement in our practice
- There have been so many other features that have come up over time and things that it allows us to do!

SOME EXAMPLES OF RESULTS

Before bringing up figures, let's discuss the power of data which is, today, equivalent to jamming our doors open. It does not hold us back, because the more we have, the more we absorb, and the more power it gives us. Who among us has not complained about the changes to our healthcare system, and the fact that we are increasingly led by financial considerations?

Data, if we choose to collect it and to analyse it ourselves, as a result improving our practices, may offer us the opportunity to value our work on the basis of results. We have so much to gain!

Now, for the results.

I will share with you some of the results from our first forays into exploring the data from Orthense, which we presented at ESSKA a little over a year ago.

Patient participation.

Participation was very high with a very significant rate of questionnaire completion. (Figure 1). No phone calls were necessary!

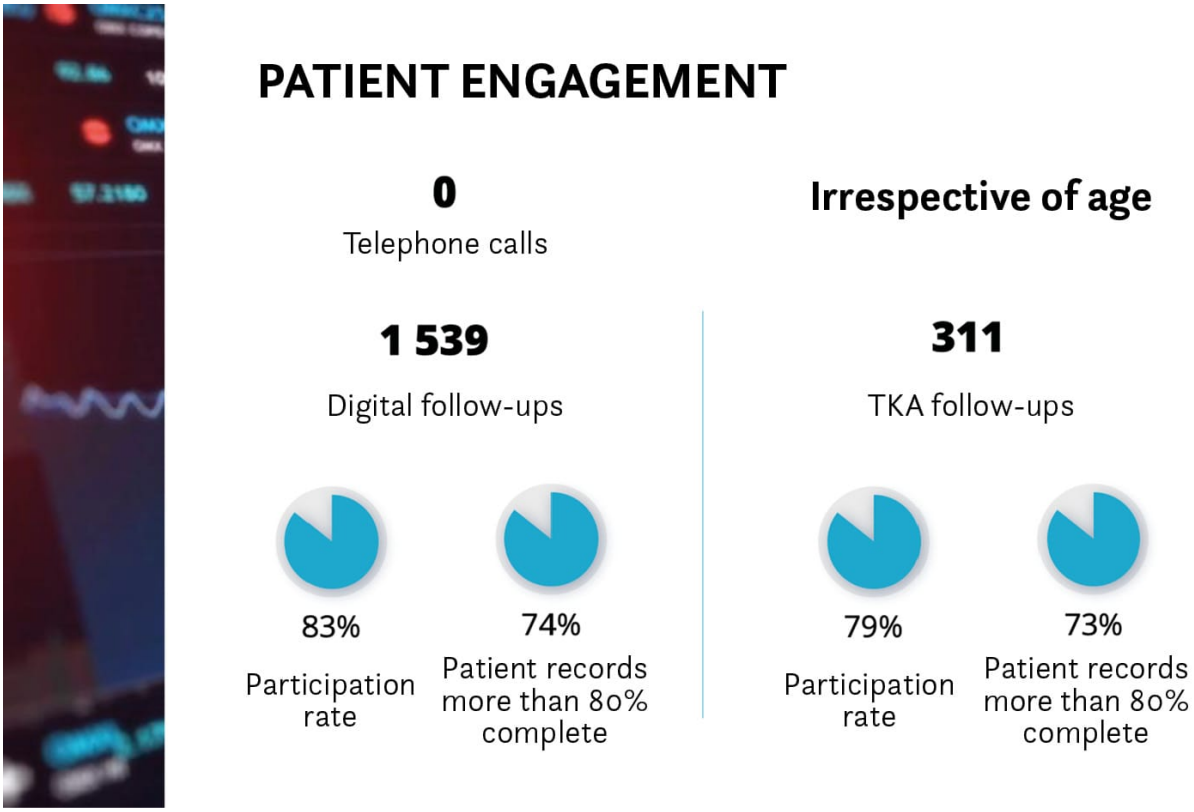

Figure 1: patient participation.

This applied irrespective of age, since the response rate for TKR was equivalent to the response rate for all knee surgeries combined (arthroscopy, ligamentoplasty, etc.), even though the mean patient age was noticeably higher.

The received idea persists that older patients will not be able to use a digital tool, and this is false.

The patients were treated at a number of facilities and with different surgeons, from across the whole of France. This means that there is no selection bias in favour of a particular patient group.

Clinical score and patient satisfaction

A high score on the KOOS, which has for a long time been considered to be a criterion for judging a knee arthroplasty result as good, and it still is, turns out to be very poorly correlated with overall patient satisfaction. Should we still use it? Is it time to update it? (Figure 2).

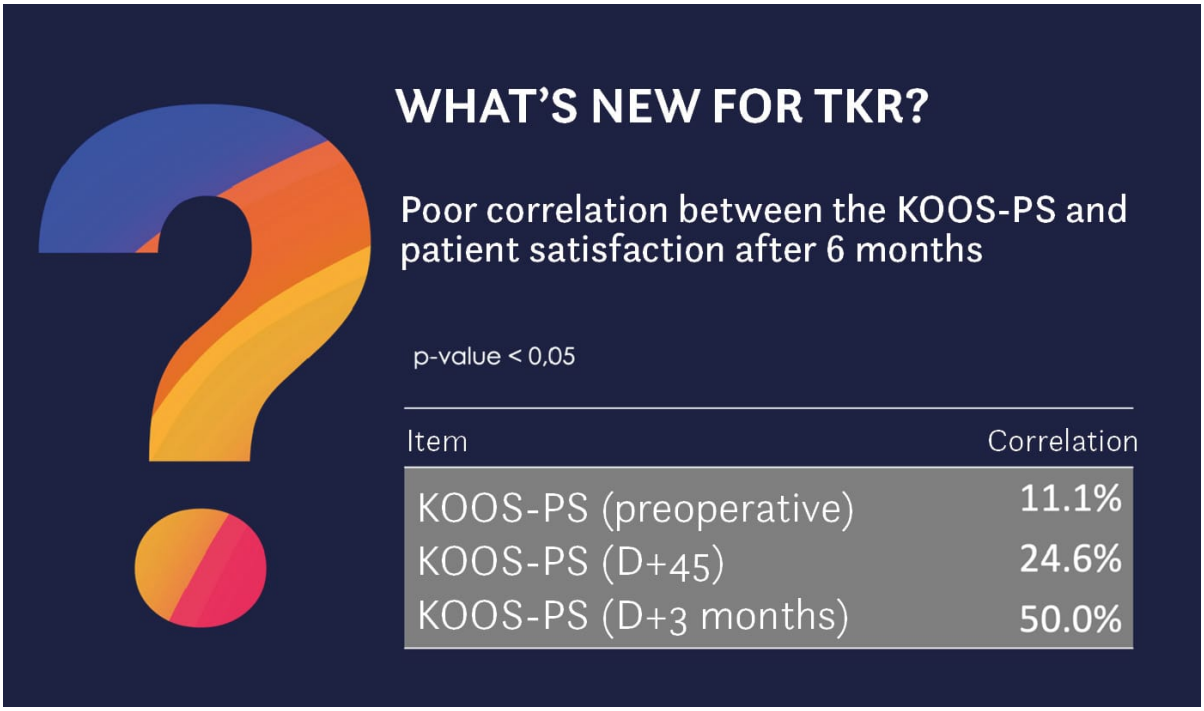

Figure 2: correlation between a long-established clinical score and patient satisfaction

On the face of it, it is no longer a good measuring tool, at least in terms of patient satisfaction. It may perhaps continue to be a useful tool for comparisons between studies.

The impact of level of pain after TKR

Apply-ing the Net Promoter Score (NPS), the detractors, or least satisfied group, whether thinking about their experience during movement or at rest, rated their satisfaction between 0 and 6 on a scale of 0 to 10, and felt greater postoperative pain than the promoters (scores of 9 and 10) (Figure 3).

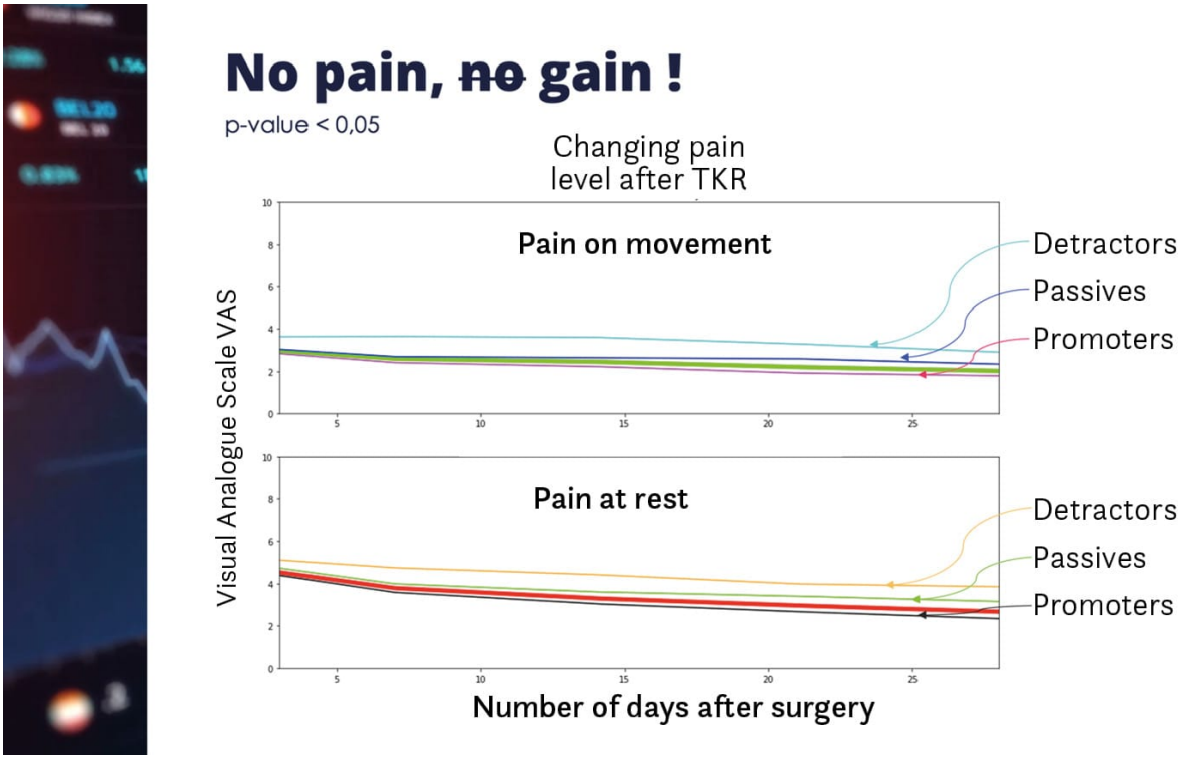

Figure 3: the impact of level of pain after TKR

Intuitively we could be sceptical, but this supports the need for highly effective pain control protocols. Even though it is "normal" to hurt after surgery, which is never totally harm-free, we cannot be content with the all-too-common response of, "Don't worry, it will pass!"

How pain over the first 24 hours

The diagram on correlation is somewhat difficult to understand, but it shows that being in significant pain on D+1 post-surgery has the almost unavoidable effect that the patient will be walking with crutches 1 month after surgery (Figure 4). This finding is perhaps less intuitive.

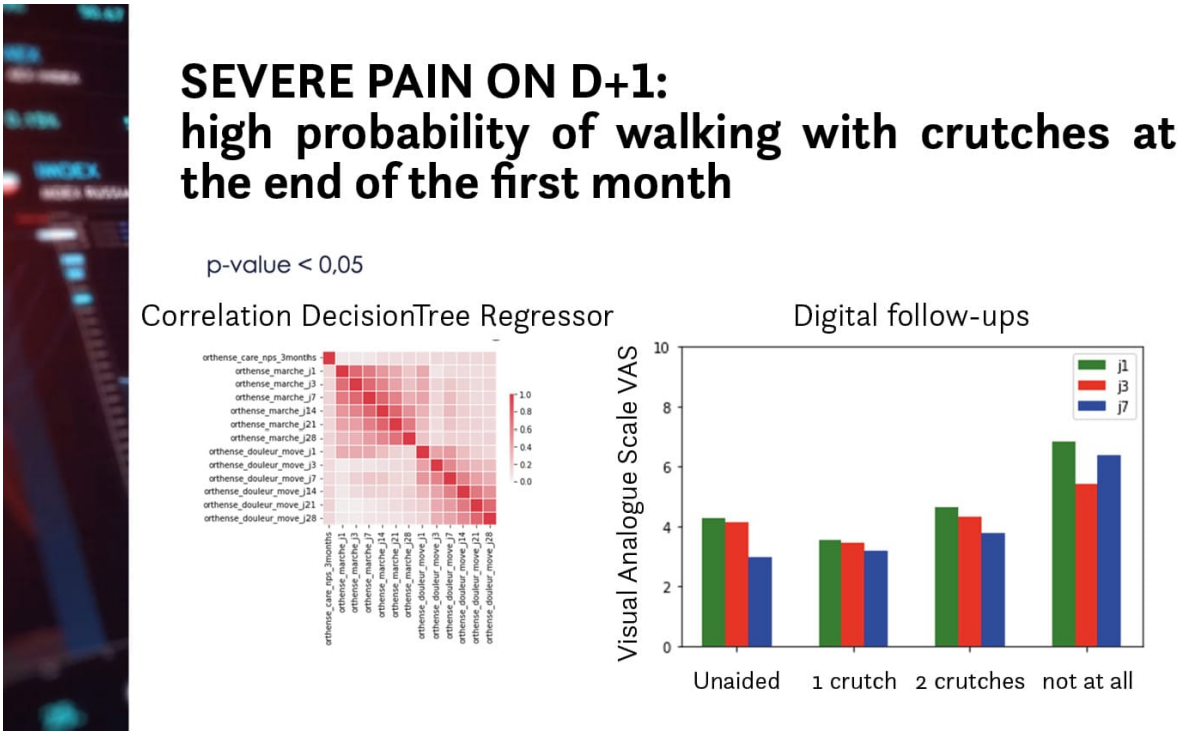

Figure 4: how pain over the first 24 hours impacts whether the patient walks with crutches after 1 month

However, we need to be asking a number of questions about how we manage surgery and also anaesthesia. The results need to be shared for improvement to be possible!

And, let's not forget the outpatient question, as the data show that less pain is experienced at home than in a hospital facility. Being an outpatient, from this perspective, could well be a factor for greater independence after 1 month.

I often hear that "one night isn't going to change much". I wouldn't be so sure.Pain management is not just a question of technique or medication!

More specific data

We don't see our patients very often at all, and there may be a long interval between two appointments. Data collected from the patient, by the patient, allows us to take a more granular view that surely means we can adjust the timing of appointments so that they take place when they are most useful (Figure 5).

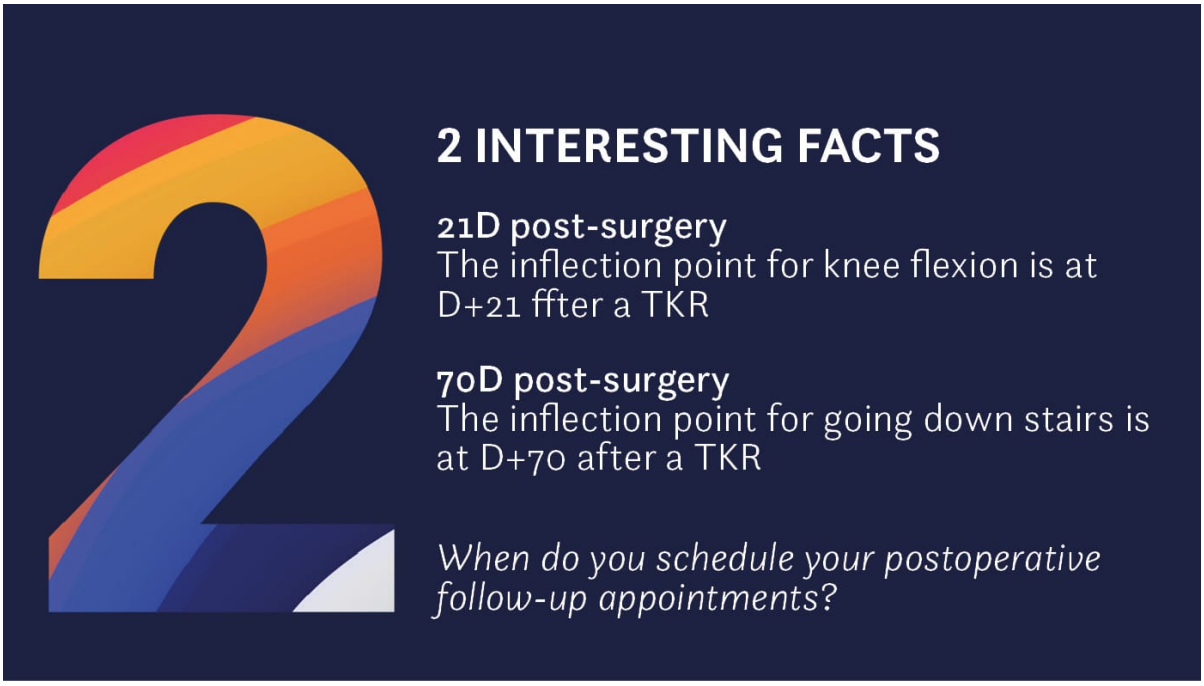

Figure 5: more specific data

Analysing a lot of data gives us the basis to demonstrate whether, after TKR, flexion that does not exceed 90° by D+21 will improve any further. If it won't, waiting is pointless if we want to perform manipulation under general anaesthesia. I always used to see my patients for a first postoperative appointment 6 weeks after surgery. Now I see them after 3 weeks.

The more data we have, the more we can develop our practice. And the more willing we are to collect it, the more we can enrich our practices, as these are often varied and we can all learn from others.

CONCLUSION

I hope that I have convinced you that we all still have a lot to learn, as long as we decide that we want to hear it.

Evaluation is improvement. This may sound banal if it has been repeated often, but it is no less relevant. It is true both for us and for our patients. The way it works is that when you have to evaluate yourself, you have to give yourself a score. Let's remember that it is nicer to have a good score than a bad one. When you have to give yourself a score, you could cheat, or you could provide yourself the means to achieve that good score. So, you will pull out the stops to get a better result! By inviting patients to self-assess, you give them the opportunity to improve their results, and, as a result, their satisfaction.

I prefer to have a satisfied patient than an unsatisfied one. We can all, collectively, benefit from having satisfied patients.

I believe that our profession has understood the importance of securing data with the creation of the French registry, RENACOT. But its success is dependent on our participation, which needs to be as broad as possible. I'd be delighted and interested to hear your thoughts on this topic, or any other. I look forward to it!