National Institute for Health and Care Excellence

IP1788 / Lateral elbow resurfacing for arthritis

IPAC date: 8 July 2021

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
1	Consultee 1	1.1	The Lateral elbow resurfacing (LRE) offers a unique treatment option for very specific, unicompartmental elbow arthritis. The indications require good pre-operative work up including failed non-operative treatment including physiotherapy, injection therapy, and arthroscopic debridement. Alternative surgical treatment options for unilateral elbow arthritis are very limited, technically very demanding (e.g. interposition arthroplasty) and have shown to be of only limited value when considering patient reported outcomes, revision rates and surgical complications. In my limited experience, the LRE offers a surgical treatment option when other alternatives are either contraindicated or indeed unnecessary. The young or middle-aged patient, who is still active, with persistent pain and functional impairment, despite a prolonged course of non-operative measures (see above) with confirmed (arthroscopic) uni-lateral elbow arthritis, represents in my limited experience, the ideal patient, to receive the LRE. Clearly, the indications are less common and the numbers will therefore always be limited, certainly when compared to the more commonly performed joint replacements. However, it would be detrimental for those patients, if the LRE would not be available. It goes without saying, that all guidelines and recommendations should be aligned with those for other joint replacements, particularly with regards to training in the surgical technique, pre-operative information and consent of the patient, appropriate experienced theatre team as well as post-operative physiotherapy team, NJR registration and mid to long term follow up data, allowing for single-surgeon, surgical-unit and multi-centre data	Thank you for your comment. The draft recommendation is that this procedure should only be used with special arrangements for clinical governance, consent, and audit or research. This means that there are uncertainties about whether the procedure is safe and efficacious. If these arrangements are in place the procedure can be offered to eligible patients. The committee considered that there was not enough good quality peer-reviewed published data for the procedure to be used with standard arrangements. The Committee considered this comment but decided not to change the guidance.

			analysis to ensure implant safety and efficacy. These issues are not unique to the LRE implant and have become increasingly relevant in many arthroplasty applications, where single-surgeon numbers are limited and implant design changes are common (most modular arthroplasty systems). The LRE should therefore be treated as most other surgical implants available for arthritis, without any additional restrictions or limitations. To my knowledge, it is the most bone preserving available elbow implant for arthritis, thereby keeping all conventional surgical options open for future revision to Total Elbow Arthroplasty. The LRE can also be implanted through a minimal invasive lateral elbow approach, similar to Radial Head Replacement and lateral compartment fracture fixation.	
2	Consultee 1	1.2	I am uncertain about the benefits and gains of informing the clinical governance lead (who is often unaware of the details of any surgical procedure) about this procedure as long as the clinician follows the same guidance, safety and training considerations as well as post operative follow up and surveillance as he would do for Total Elbow Arthroplasty.	Thank you for your comment. This is recommended for all procedures with 'special arrangements' guidance. Please also see response to comment 1.
3	Consultee 1	1.4	the term 'extensive experience of elbow arthroplasty" is somehow misleading and certainly not very useful. The average number of elbow arthroplasties performed in the UK is less than 5 per annum per elbow surgeon. The LRE procedure is significantly less demanding and much easier to learn than total elbow arthroplasty and therefore any guidelines and recommendations should not be more stringent than those for total elbow arthoplasty.	Thank you for your comment. Section 1.4 of the guidance has been changed to 'The procedure should only be done in specialist centres by surgeons who do elbow arthroplasty regularly and have training in this specific technique.'
4	Consultee 2	1	I commend the committee's recommendations for continued prospect review of clinical outcomes for this implant - either through the NJR or local reviews. However, I think that the benefits of the implant have been understated. I hope that you will receive comment from patients that have been treated. This is a much less invasive treatment than a total elbow replacement	Thank you for your comment. The Committee considered this comment but decided not to change the guidance. Please

			and the results available suggest that the longevity is superior. It is unconstrained and anatomical and so will in theory be exposed to less wear than normal total elbow replacements.	also see response to comment 1.

5	Consultee 3 British Society for Rheumatology	1	We would hope to see more specific research recommendations, potentially flagging with NIHR a potential call for research in this area, as an RCT would have been very helpful at a similar stage of development of Charnley's total hip replacement procedure.	Thank you for your comment. A statement has been added to the draft guidance to suggest specific outcomes for further research.
6	Consultee 3 British Society for Rheumatology	1.4	It is not clear whether these are sufficient safeguards. Presumably there is also training available on the lateral resurfacing procedure itself, which also should be undertaken before operating independently?	Thank you for your comment. Section 1.4 has been changed to 'The procedure should only be done in specialist centres by surgeons who do elbow arthroplasty regularly and have training in this specific technique.'
7	Consultee 3 British Society for Rheumatology	1.1	We agree this is appropriate	Thank you for your comment. Consultee agrees with main recommendation.
8	Consultee 3 British Society for Rheumatology	1.2	We agree these are all highly appropriate, given the limited evidence and importance of informed consent for procedures with developing evidence.	Thank you for your comment. Consultee agrees with recommendations in section 1.2.
9	Consultee 3 British Society for Rheumatology	3.1	This summary should include the aggregate number of unique patients (we believe 154) and elbow procedures included in the 6 case series to emphasise the extremely limited level of observational data and that the number of different devices included.	Thank you for your comment. Additional information on the evidence, including the number of patients, is in the overview document.
10	Consultee 3 British Society for Rheumatology	3.2	We do not see the list of experts and committee members. There should be lay representation, if not at least one patient who has had the procedure or suffering from elbow arthritis and eligible/been offered it.	Thank you for your comment. The committee is a standing advisory committee and includes 2 lay members. Details of the committee are on the NICE website:

				https://www.nice.org.uk/get-involved/meetings-in-public/interventional-procedures-advisory-committee As part of the process for IP guidance, commentary was also sought from patients who have had the procedure, but no responses were received.
11	Consultee 3 British Society for Rheumatology	3.4	We would suggest trying again to get patient commentary, asking the authors of case series to invite patients to take part, subject to GDPR permissions. We see patient commentators' opinions are being sought, but the summary is not clear with progress.	Thank you for your comment. Patient commentary was sought through the usual process for IP guidance, but no responses were received. Please see additional response to comment 10.
12	Consultee 4	General	This is an implant for the specific indication of lateral elbow pain due to osteoarthritis or post-traumatic arthritis. There will never be many patients requiring this implant but for this niche group this prosthesis provides probably the best longterm solution for those pts with pain not controllable with painkilling medication or change in activities. It uses conventional materials and has excellent published longterm results. It should only be used by surgeons trained in its use with a specialist interest in upper limb arthroplasty.	Thank you for your comment. Section 1.4 has been changed to 'The procedure should only be done in specialist centres by surgeons who do elbow arthroplasty regularly and have training in this specific technique.'
13	Consultee 5 Consultant shoulder and elbow surgeon	General	I am writing in my capacity as a Consultant Shoulder and Elbow Surgeon at the [redacted] which acts as a tertiary centre in the management of complex shoulder and elbow conditions. I have undertaken a lateral resurfacing elbow arthroplasty, using the Lateral Resurfacing Elbow system (LRE), on a number of occasions, as	Thank you for your comment. Consultee describes positive experience of using the procedure and thinks it should be one of the treatment options

			it provides options in the management of complex elbow arthritic conditions which are not otherwise easily addressed by other elbow arthroplasty systems. The management of the young patient with elbow arthritis is extremely difficult, especially in more advanced stages of the disease. Slowing the progression of disease, or the need to manage the condition with a total elbow replacement (TER), is therefore helpful and any technique or device that can be used to address this problem should be encouraged. The LRE, is very helpful in that it only replaces the radiocapitellar joint, as opposed to the ulna-humeral joint, which is replaced in a typical total elbow replacement. Furthermore, revision rates for traditional TER are high, particularly in the young adult, and therefore viable alternatives to a TER are welcomed. The LRE provides the ability of the surgeon to address a patient with an arthritic elbow joint without exposing them to the risk of early failure with a typical TER. The design of the LRE also permits more normal activity and loading of the elbow following the procedure, which is not the case when using a TER, following which significant restrictions to prevent early failure of the implant are needed. Furthermore, if the LRE is used, but the arthritic process continues, then it can always be revised to a total elbow replacement without compromising the longevity of the TER. When I have used the LRE, I have been happy with the outcomes and indeed, the patients have also been pleased with the outcome. This is especially the case for the younger patients in the cohort, as they are relieved that that can continue with their normal activities, including work, which would otherwise not have been possible if one had to resort to using a typical total elbow replacement. All clinicians are encouraged to collects PROMS data for their patients and especially arthroplasty cases. This would be relevant for this procedure and it should also be encouraged. The use of the LRE, and	available in the management of elbow arthritis, particularly in young active adults. Please see additional response to comment 1. A committee comment has been added, stating that the procedure can markedly improve quality of health in some patients.

			implants like it, could also be included on the NJR elbow arthroplasty database, and therefore there could be active monitoring of outcomes, so that they could be monitored in the short, medium and long term. In conclusion, my personal view, is that the LRE provides an important treatment option that otherwise would not be available to clinicians who manage elbow arthritis, and especially in young patients. I would therefore welcome access to the implant system as one of the treatment options available in the management of elbow arthritis, particularly in the young active adult.	
14	Consultee 6 Patient	General	[redacted] performed a LER on my left elbow (I'm left handed) on the 5th October 2020 (I'm 66 years of age). I comment to add to the Quantity and Quality of the efficacy of this operation. Prior to the operation I was able to actively use my left arm but only with use of pain killing drugs (ibuprophen and paracetmol) and a lot of pain. The pain was experienced carrying, turning, opening and twisting during minor activities. I also played tennis (in a lot of pain). Since the operation all pain has gone - my elbow works perfectly albeit with loss of strength due to muscle wastage (which is slowly coming back). I can now play tennis without pain (with practice I'll be back to where I was but without pain).	Thank you for your comment. The committee welcomes hearing from patients who have had this procedure and considered your experience and views in their deliberations.
15	Consultee 6 Patient	General	I suffered from Osteoarthritis of the left elbow.	Thank you for your comment.
16	Consultee 6 Patient	General	I had, a few years prior to the operation, had a clean out and repair of the joint - arthroscopy.	Thank you for your comment.
17	Consultee 7 Company LRE System Ltd	1.1	The wording of this section (1.1) might discourage elbow surgeons from using an LRE, which we believe would be disadvantageous to patients and does not take into account the overall benefit-risk as compared to other available treatment options. Currently, the only other option for patients requiring elbow joint replacement is total elbow replacement (TER). Outcomes with TERs are poor: for example, the systematic review of Welsink et al. (2017) reported TER survival rate of 79.2% after 11.1 years, calculated a mean revision rate of 14.4% after 7.1	Thank you for your comment. The Committee considered this comment but decided not to change the guidance. Please

			years for the four most frequently used TERs, and complication rates up to 38%. We believe the poor survivorship of TERs is largely due to the removal of the radial head, which destabilises the joint, combined with bone resorption in the medial compartment, which can lead to implant loosening and associated complications. By comparison, LRE outcomes are excellent. Although the data is limited, it is statistically consistent and significant: - 100% survivorship at 10 years - Increase in mean Mayo Elbow Performance Score from 43.2 to 78.3 ($p < 0.00001$) - Increase in American Shoulder and Elbow Surgery score (ASES-e) from 54.3 to 76.6 ($p < 0.00001$) - Range of motion: increase in flexion arc from 71.6 to 101° ($p = 0.014$) - Radiographic evidence: no radiolucencies or other signs of loosening Use of an LRE does not compromise conversion to a TER, should it be required in future. Given the poor performance of TERs, and irreversible bone resection which limits future treatment options, the benefit-risk conclusion of TERs is poor compared to the LRE. If the recommendation is that the LRE should only be used with special arrangements, the same should be true of TERs (with priority given to LRE for suitable patients). The LRE data is limited but strong; TER data is abundant and poor.	see additional response to comment 1 that reflects the reasons why the draft guidance recommends the procedure to be available under special arrangements.
18	Consultee 8	General	I am the surgeon designer of the LRE which was developed initially to treat a subgroup of my patients with degenerative changes confined to the radiocapitellar joint seen during arthroscopic examination but whose x-rays demonstrated little or no abnormality. Subsequently, we used the system in patients with observable degenerative changes in both compartments of the elbow (ulnohumeral and radiocapitellar joints). The outcomes observed in both sets of patients have been consistently good and significantly better than the results reported of other surgical procedures for elbow arthritis, including total elbow joint replacement arthroplasty (TER). In patients with disease in both compartments of the elbow, we have observed a return to normal daily activities (including manual labour such as building work) and a halting of progression of the disease in the medial	Thank you for your comment. The IP programme does not assess the efficacy and safety of comparator interventions. We do not compare interventions to a gold standard. The committee considered that there was not enough good quality peer-reviewed published data for this procedure to be

			compartment. My concern with respect to this guidance is that there appears to be an implicit assumption that there is a 'gold standard' treatment option available for this patient population which is proven in terms of the acceptability of clinical safety, performance, and overall benefit-risk: but this is not the case. The only other available proven effective treatment option for patients requiring elbow joint replacement is total elbow replacement (TER). There is however no TER system currently available which provides outcomes comparable to better established joint replacement implants (JRIs) such as hips and knees. Implant survivorship of TER is poor (typically less than 60-70% at 10 years, compared to 95% at 10 years for hips) and the complication rate is very high (35-40%). Perhaps therefore you would agree that the guidance should provide some insights in to when a TER, given its high complication rates, poor survivorship, and irreversible and destabilising bone resection, would be preferable to an LRE. It is possible to convert from an LRE to a TER, but it is not possible to convert from a TER to an LRE – The LRE is more conservative and offers a much lower risk to patient than TER, and I consider that the guidance should reflect that. The clinical evidence for this, whilst limited compared to longer established JRIs, is still statistically significant and a class above outcomes achievable with TER. It should also be noted that patient numbers in TER studies are also typically small compared to JRIs such as hips and knees. The prospective multicentre trial of the LRE begun by a group of Italian surgeons in 2008 remains the only prospective multicentre trial of any upper limb implant of which I am aware. Therefore, while the evidence for both is comparable in terms of study quality, in terms of outcomes the LRE compared with TER is far superior.	used with standard arrangements. A committee comment has been added to state that the procedure does not preclude revision to total elbow arthroplasty.
19	Consultee 8	General	Additional background information: The development of the LRE began in 2002 with Biomet Ltd, a company with whom I had earlier developed a total elbow replacement	Thank you for your comment.

			(TER) system known as the Instrumented Bone Preserving (IBP) elbow. As I was finding that the results of TER in patients with osteoarthritis were not as good as those I had observed 10-20 years earlier in patients with severe rheumatoid erosive arthritis which had resulted in considerable bone destruction, I had begun to revert to non-implant surgical options for patients with elbow arthritis (open arthrolysis and debridement or arthroscopic debridement) rather than TER. Whilst carrying out these procedures it became evident to me that the pattern of articular cartilage degeneration was the same, loss of articular cartilage from the radiocapitellar joint (lateral compartment of the elbow) contrasting with either normal or much better preserved articular cartilage in the ulnohumeral joint (medial compartment of the elbow. I began to use the LRE in my clinical practice in 2005. The LRE proved effective treatment for pain relief in patients with radiologically well-preserved elbows. I also began to use the LRE combined with arthrolysis for patients with elbow pain and stiffness due to more advanced degenerative changes with the expectation of improving the outcome of arthrolysis particularly in terms of pain relief. In this group of patients, a TER would have been an appropriate treatment option. The results of LRE combined with arthrolysis in terms of pain relief and range of movement were found to be comparable to TER. LRE combined with arthrolysis was however much more conservative than TER as LRE arthroplasty did not require the extensive bone resection necessary to insert the components of a TER. LRE arthroplasty also avoided the use of the stemmed implants which make revision surgery for TER difficult and associated with a relatively poor outcome for the patient and a high serious complication rate. I reported the surgical technique and early results in 2007. (Pooley J. Unicompartmental elbow replacement: development of a lateral	Consultee describes the rationale behind the development of the procedure. Pooley J (2007) is included in the key evidence in the overview. Giannicola et al. (2012) is included in the key evidence in the overview. Giannicola et al. (2019) is included in the key evidence in the overview. Watkins et al. (2018) is included in the key evidence in the overview.

			replacement elbow (LRE) arthroplasty. Tech Shoulder Elbow Surg 2007;8:204-212) The LRE began to be used at an early stage following its introduction by experienced elbow surgeons who visited my unit some of whom invited me to demonstrate the procedure in their units both in the UK and Europe. A prospective multicentre trial of the LRE was begun in Italy and the medium-term results were reported by Giannicola et al. (J Shoulder Elbow Surg 2012;21:456-63) The overall good/excellent medium term-results of the LRE in these patients (45% of whom were manual workers, all of whom returned to their original occupation within 6 months of surgery) have been maintained in the longer term and reported by Giannicola et al. (Midterm results of radiocapitellar arthroplasty of the elbow. Bone Joint J 2019;101-B1362-9.) My initial group of patients (2005-2008) have been followed prospectively. Their long-term (up to 10 years) results were then independently assessed and reported by Watkins et al (Long term results of the lateral resurfacing elbow arthroplasty. Bone Joint J 2018;100-B:338-345). Who found that the overall good early results had been maintained in the long-term and no revision procedures had been required for any of these patients. In summary: The LRE has proved to be effective long-term treatment in patients with 'arthritis' (primary osteoarthritis, secondary osteoarthritis and rheumatoid arthritis' whose x-rays indicate that the degenerative changes are confined to the radiocapitellar joint. There are no reports in the literature of comparable good long-term results in this group of patients with any other surgical treatment (including radial head excision, arthroscopic procedures) LRE combined with arthrolysis has been demonstrated to provide good long-term results in patients with radiologically more advanced arthritis for whom a TER would have been a reasonable treatment option.	

			The advantages of LRE in comparison to TER are: • LRE is technically a much simpler and more conservative surgical procedure than TER in that it preserves the normal bony anatomy of the elbow. LRE avoids the need for extensive bone resection required for TER and the insertion of stemmed implants which inevitably result in difficult revision procedures. • LRE does not require the restrictions of activities necessary following TER in order to protect the implants from mechanical wear and loosening necessitating revision. • Consequently, LRE is appropriate for a wider range of patients, including younger manual workers and elderly patients who need to use wheelchairs or walking aids, which would result in early component wear and loosening of TER implants. • LRE has been found to be associated with a low complication rate and the good early results have been maintained in the longer term (up to 10 years) and no revisions have been reported. • Lower complication rates compared to TER • Excellent survivorship, particularly in comparison to the very poor survivorship associated with TER • Preserved bone stock compared to TER, preserving the range of treatment options available in the unlikely (based on our experience) event that future interventions are required The numbers of TER procedures carried out annually has fallen during the past 20 years to the extent that it is now considered necessary to move to limit the use of TER to regional or sub regional 'specialist' centres. I am however aware of considerable and growing support for the need for LRE arthroplasty by orthopaedic colleagues in the UK and Europe and also, perhaps more importantly individual patients who consider that LRE arthroplasty has made a big impact on the quality of their lives. 	

			Consultant Orthopaedic Surgeon	

20	Consultee 8	General	I have appended below the comments made by [redacted] who sent them to me by email and asked me to submit these on his behalf. [redacted] is a consultant orthopaedic surgeon working in Vienna. He began to use the LRE very soon after its introduction into clinical practice in 2005 and then very soon after the system became available again with single use instruments in 2020. To the NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE I`m writing to you as one of the most experienced users of LRE implant. I´ve even been able to use this very implant during the period of relaunch due to a special and individual permission given by the Austrian Health Authorities. Thus gives me the opportunity to comment on the implant regarding long and also short term results. Please find the abstract submitted to SECEC 2021 below. LRE implant is the only implant used on the elbow restoring the anatomy. It gives us excellent long term results with high patient saisfaction. Range of motion, articular stability and osseous stability remain over time. Our only failure was due to polyethylene degradation. Scores in long and short term follow up are absolutely encouraging. As the surgeon doing more than 50% of implants in Austria and highly experienced in any elbow surgical procedure and alternative implants I consider LRE being the outermost important development for this joint ever since. As burning no bridges even younger patients might successfully be treated with this device.	Thank you for your comment. Consultee describes positive experience of using the procedure in Austria.
21	Consultee 8	2.2	To the comments on LRE Current treatments 2.2 Treatment for elbow arthritis depends on the severity of the disease. Conservative treatments include analgesics and corticosteroid injections to relieve pain and inflammation, and physiotherapy and prescribed exercise to improve function and mobility. When symptoms are severe, surgery may be indicated.	Thank you for your comment. A committee comment has been added to the draft guidance,

			Options include arthroscopic debridement, interposition arthroplasty, replacement or excision of the radial head, or total elbow replacement. LRE quite as arthroscopy does not hamper anatomy and stability of the elbow. Neither do burn down any bridge vital to revision or salvage.	stating that the procedure does not preclude total elbow arthroplasty.
22	Consultee 8	2.3	The procedure 2.3 Lateral resurfacing of the elbow for arthritis is usually done under regional or general anaesthesia. The patient is typically placed on their side with the elbow uppermost. An incision is made in the back of the elbow and the triceps muscle is split to access the elbow joint. The joint is dislocated, and the articular surfaces prepared. Sizing is possible and should be done in any instance by templating on 100% X-ray prior to surgery. The capitellum of the humerus is sized, and then after inserting a guidewire the capitellum is reamed using a surface cutter, and a peg hole is then created. A trial component is inserted. A guidewire is then inserted into the radial head and the surface is shaped with a cutter to produce a concave face. A peg hole is then created in the radial head and a trial component inserted. Once the trial components have been tested for stability and range of movement and there is a satisfactory result, the definitive components are implanted and the joint reduced. The triceps and other soft tissues are repaired, and the skin is closed with sutures. A cast or splint is used for 4 to 6 weeks after which function is gradually resumed. 2.4 A potential advantage of this procedure over a total elbow replacement is that it preserves the natural inner compartment of NICE interventional procedures consultation document, April 2021 IPCD – lateral elbow resurfacing for arthritis Page 5 of 5 Issue date: April 2021 © NICE 2021. All rights reserved. Subject to Notice of rights. the elbow. Movements are therefore likely to be more like a natural elbow joint. At our hospital permanent documentation is ensured and all our recent cases are prospectively followed. Thus we might be able to pick up any problem with LRE immidiatly. As you can easily recognize the use in our institution is save and high experience is guaranteed.	Thank you for your comment. The procedure description has been revised to remove some of the detail. This section of the guidance is intended to be a brief summary of the way the procedure is typically done.

			I`d like to emphasize that the results below are meticulousely followed up and documented. Regular peer reviewed presentations at different Congresses (as DVSE, AGA, Orthopeadic Congress of Austria 2019) would back this impression. Speaches were given also comparing LRE to the semiconstrained Discovery Total Elbow Arthroplasty (TWA) constantly showing the superior results after the anatomic solution by LRE over the stemmed and semiconstrained implant as to ROM, scoring and loosening. The latter being much more frequent in the TWA group. Pain reduction, improved mobility and activities of daily living and QUALi are are stated regularely over time. The only reoperation was do to PE failure. The implants had been firmely incorporated. There was no infection and no nerval lesion. Our patient satifaction is well documented in using the Liverpool Elbow Scoring. Best regards [redacted]	

23	Consultee 8	General	Abstract submitted First Long-Term And Short-Term Results Of The Lateral Resurfacing Elbow (LRE) Arthroplasty Sandra Seidl, Herz Jesu Krankenhaus, Vienna, Austria Aim The aim of this study was to report our experience with lateral resurfacing in treatment of osteoarthritis of the radiocapitellar joint. Background We compared long-term versus short-term results between two different groups of patients after Lateral Resurfacing Elbow (LRE) arthroplasty. Methods We reviewed a series of 14 patients (16 elbows) who underwent LRE between 2007 and 2021. Mean follow up was 1,5 years (1 to 2) within the short-term group and 10,5 years (7 to 13) within the long-term group. 8 patients were women and 6 were men with an overall mean age of 52, 44 years (26 to 77). We had primary osteoarthritis, posttraumatic and rheumatoid arthritis as diagnoses. The clinical scores we used were MEP; LES and VAS (motion and rest). Range of motion, strength and radiologic outcomes were also recorded. Results A Mann-Whitney-U-test showed no significant difference in the range of motion (flexion: p= 1, extension: p= 0,865, pronation: p=0,103, supination: p= 0,219) nor showed a two sample t-test	Thank you for your comment. The NICE IP Programme Manual highlights that efficacy outcomes from non peer-reviewed studies are not normally presented to the Committee, unless they contain important safety data. Conference abstracts are not normally considered adequate to support decisions on efficacy and are not generally selected for presentation in the overview unless they contain important safety data.

			differences in one of the evaluated scores (MEP: p= 0,907, LES: p= 1, VASmotion: p= 0,494, VASrest: p= 0,277). A Wilcoxon-test showed no significant differences in strength (extension: p=0,532, flexion: p= 0,139, supination: p=0,432, pronation: p= 0,064, fist closure: p=0,088) comparing the operative with the non operative side. A Kaplan-Meier analysis showed an 10-year survival of 75% (95% CI, 53% to 97%). One revison because of polyethylendebris without any loosening of the components we can record. Conclusions Due to the fact that there was no signifikant reduction in our evaluations in combination with a high operation satisfaction of the patiens (mean=78,44; SD=27,5) radiocapitellar joint replacement is, in our opinion, a good alternative to total elbow replacement in cases with radiacapitellar joint arthritis with mild or less ulnohumeral arthritis.	

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