National Institute for Health and Care Excellence

IP956– Insertion of an annular disc implant at lumbar discectomy
Consultation Comments table

IPAC date: Friday 12th September 2014

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
1	Consultee 3 European healthcare professional (consultant for the manufacturer and investigator on an ongoing RCT)	**1**	A general comment on the limited literature available for anular closure: In my abstract entitled, 24 Month Safety Data from a Prospective, Randomized Clinical Trial Evaluating an Anular Closure Device: An Interim Review, presented at the EuroSpine specialty meeting in Prague earlier this year, our results were as follows: 421 subjects have been enrolled through September 2013, with 251 who have completed 12-month, and 90 their 24-month, follow-up visits. Similar numbers of subjects in each group have reported an adverse event (Barricaid 49%=102/210, Control 53%=112/211), with fewer serious adverse events (SAE) reported for Barricaid patients (40 vs 63). The Barricaid group had 59% fewer reoperations at the index level (14 vs 34), and 74% fewer reoperations following recurrence including repeat reoperations (7 vs 27). Among the SAEs for Control patients, 20 were procedure related, while among the SAEs for anular closure device (ACD) patients: 6 were procedure related, 1 was device related, and 1 was both. The conclusions for this interim report of an ongoing RCT provided an initial view of safety outcomes with use of an ACD compared to discectomy alone. The use of an ACD introduces potential safety risks not associated with a surgery that traditionally does not call for an implant. Although interim results are promising, a favorable risk-benefit ratio can only be fully confirmed with the final study data.	Thank you for your comment. The conference abstract mentioned does not provide details on the kind of adverse events reported. Therefore, it was not considered adequate to select this abstract for presentation in the overview.

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
2	Consultee 1 European healthcare professional (lead clinical investigator on an ongoing RCT)	**4**	The kaplan meyer survival for lumbar discectomy stabilizes in most papers (Mc Girt 2003 and 2006) after 24 months, therefore the mayority of recurrent disc herniation occur in the first 24 months. This correlates to biological healing and ongoing disc collapse bein main reasons to decrease incidence of recurrencies in the following years.	Thank you for your comment. The committee discussed the need to consider long term efficacy outcomes and noted that the majority of recurrent herniations occur within 2 years. Section 4.5 of the guidance has been changed.

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
3	Consultee 2 Manufacturer	**4**	One adviser commented that the key efficacy outcome would be recurrence of herniation over a 10-year period. Published literature suggests that the majority of reoperations following decompressive surgery for lumbar herniations occur within the first two years after surgery. (Reference 2,) One long-term prospective study that included over 200 sciatica patients treated surgically reported that there was no change in functional status from years 2 through 10 following surgery, and that half of reoperations occurred within the first 24 months. (Reference 3) Ten years is not a common follow-up period for most surgical procedures and may not be attainable. References : 1-Carragee EJ, Han MY, Suen PW, Kim D: Clinical outcomes after lumbar discectomy for sciatica: the effects of fragment type and anular competence. J Bone Joint Surg Am 85-A:102-108, 2003 2-Martin BI, Mirza SK, Flum DR, Wickizer TM, Heagerty PJ, Lenkoski AF, et al: Repeat surgery after lumbar decompression for herniated disc: the quality implications of hospital and surgeon variation. Spine J 12:89-97, 2012 3- Atlas SJ, Keller RB, Wu YA, Deyo RA, Singer DE: Long-term outcomes of surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation: 10 year results from the maine lumbar spine study. Spine 30:927-935, 2005	Thank you for your comment. The committee discussed the need to consider long term efficacy outcomes and noted that the majority of recurrent herniations occur within 2 years. The comment regarding herniation over a 10-year period came from a specialist adviser. Other specialist advisers agreed with the need to consider efficacy in the long term. The guidance document has been amended to remove reference to the 10-year period while retaining the specialist advice to consider long term recurrence rates as a key efficacy outcome. Section 4.5 of the guidance has been changed.

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
4	Consultee 3 European healthcare professional (consultant for the manufacturer and investigator on an ongoing RCT)	**4**	In response to the comment regarding the recurrence of herniation over a 10 year period, and as an anular closure user with over five years of experience, I have the following observations from a review of my registry of â€œreal-worldâ€• patients treated with this technology: 185 discectomy patients treated with anular closure since 2009. Of those patients, 8/185 (4%) experienced symptomatic reherniation. Average time to symptomatic reherniation diagnosis/reoperation: 201 days (range 36-532 days). This data support my feeling from the daily practice that most reherniations happen in the first years after discecetomy, later reherniations are rather rare conditions. Long term outcomes are important for evaluation of the new technologies, and we investigators in the RCT are interested in becoming them. Therefore in ongoing RCT all patients are tracked annually until the last patient enrolled has reached 24 months. At the endpoint of this trial a great number of patients will pass 3, 4 and 5 years evaluation, some maybe even longer.	Thank you for your comment. As noted above, section 4.5 of the guidance has been changed.

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
5	Consultee4 European healthcare professional (Investigator on an ongoing RCT)	**4**	Follow-up interval: Obviously, outcome of spine procedures has to be analysed after some years to draw final conclusions on their efficacy in degenerative diseases. Usually, a minimum follow-up of 2 years is recommended. I personally agree that the long-term sequelae of an anular closure device are unknown as of now. However, the efficacy of any device on the rates of recurrent disc herniation can be assessed quite accurately within two years, as the majority of reherniations occur early after disc surgery. Reoperation rates for recurrence demonstrate an asymptotic curve over time (Martin et al., The Spine Journal, 2012).	Thank you for your comment. Section 4.5 of the guidance has been changed.
6	Consultee 1 European healthcare professional (lead clinical investigator on an ongoing RCT)	**Overview**	Generally there is a tendency to overuse a new implant, since the Phase II Studies and the post marketing investigation seem to be favorable in terms of safety and efficaccy. The interim safety analisis of the ongoing RCT Trial seems to demonstrate safety benefits as well. As the indication spectrum is very limited, to my opinion no more than 10% of patients with confirmed disc herniation qualify for anular closure. See also: http://saspine.org/guidelines/annular_closure_prosthesis.html	Thank you for your comment. The overview document provides a rapid review of the evidence together with the opinions of specialist advisers and patient commentary. It is used to inform IPAC in their drafting of provisional guidance. It is not changed following consultation.

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
7	Consultee 2 Manufacturer	**Overview**	One adviser commented that â€˜if this procedure is proven to be a safe and efficacious method of reducing the incidence of symptomatic recurrent disc herniation, its use may be indicated in almost all primary disc herniations. However, as we currently do not have an effective method of predicting the risk factors for symptomatic recurrent disc herniation, there is a potential risk of overtreatment and overuse of this procedure. There are effective methods to predict risk factors for recurrent disc herniation. This procedure was designed for a specific and readily identifiable minority of the primary discectomy patient population who are at highest risk of re-herniation based on anular defect size as measured during surgery. For example insertion of an anular disc implant would require a specific defect size, and very small defects should not be treated with this procedure. It is clearly indicated . Carragee et al classified clinical outcomes after primary lumbar discectomy based on the extent of anular deficiency and the presence of disc fragments, identifying that patients with large anular defects accounted for a majority of the clinically important reherniations and reoperations over time. Anular defect size observed at time of surgery is a predictive factor of failed discectomy, with defect widths greater than 6mm identified as being at particularly high risk for recurrent herniation. (Reference 1) In their study, these patients had a rate of reherniation requiring reoperation of 21%, compared to just 1% for patients with smaller (e.g., fissure) defects. These higher-risk patients made up roughly 20% of their patient population. McGirt et al reported that larger anular defects were significantly associated with a higher risk of	Thank you for your comment. The overview document provides a rapid review of the evidence together with the opinions of specialist advisers and patient commentary. It is used to inform IPAC in their drafting of provisional guidance. It is not changed following consultation.

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
			McGirt et al reported that larger anular defects were significantly associated with a higher risk of reherniation. (Reference 3) In their study, patients in the upper quartile of anular defect size as measured during surgery (25% of the patient population) had a rate of reherniation requiring reoperation of 18%, compared to less than 5% for the quartile with the smallest defects. References : 1-Carragee EJ, Han MY, Suen PW, Kim D: Clinical outcomes after lumbar discectomy for sciatica: the effects of fragment type and anular competence. J Bone Joint Surg Am 85-A:102-108, 2003 2-Martin BI, Mirza SK, Flum DR, Wickizer TM, Heagerty PJ, Lenkoski AF, et al: Repeat surgery after lumbar decompression for herniated disc: the quality implications of hospital and surgeon variation. Spine J 12:89-97, 2012 3- Atlas SJ, Keller RB, Wu YA, Deyo RA, Singer DE: Long-term outcomes of surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation: 10 year results from the maine lumbar spine study. Spine 30:927-935, 2005	

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
8	Consultee 3 European healthcare professional (consultant for the manufacturer and investigator on an ongoing RCT)	**Overview**	A comment to the overuse of anular closure technology and the prediction of risk factors for symptomatic recurrent disc herniation: In my abstract entitled, Confirming the Carragee Massive-Defect Results: Lumbar Discectomy Patients at High Risk of Reherniation, scheduled to be presented at the Annual Meeting of the Spine Section of the German Society of Neurosurgery in Innsbruck in September 2014, we reviewed interim data from the control cohort of an ongoing randomized study for symptomatic reherniations. Similar to the definition used by Carragee et al to define their â€˜massive defectâ€™ group, a key inclusion criterion for the study was an anular defect â‰¥ 6mm wide (measured intra-operatively). Limited discectomy technique was defined by Spengler. Symptomatic reherniations were reported by the site. Kaplan-Meier survivorship was estimated based on time to symptomatic reherniation, and compared to the data presented by Carragee et al. We found that 32/248 (12.9%) of patients who were enrolled in the discectomy-only cohort experienced symptomatic reherniations. Mean time from surgery was 19.5 months, with a maximum of 39 months. Mean volume of nucleus removed was 1.3cc (0.8 SD). Mean defect width was 8.0mm. Kaplan-Meier estimates of survivorship were 87% at 18 months and 83% at three years, compared to 84% and 76% respectively in Carragee et al. These data support the conclusion by Carragee et al that patients with the largest anular defects are at an increased risk for reherniation.	Thank you for your comment. The overview document provides a rapid review of the evidence together with the opinions of specialist advisers and patient commentary. It is used to inform IPAC in their drafting of provisional guidance. It is not changed following consultation.

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
9	Consultee4 European healthcare professional (Investigator on an ongoing RCT)	**Overview**	Prediction of recurrence: Recent studies (e.g. Carragee et al., Spine 2006) have shown that the type of disc herniations and particularly the size of the anular defect dramatically influence recurrence rates. Thus, only a subpopulation of patients (large anular defect + high disc) is considered a good indication of an anular closure device, which is mandatory to avoid overuse of the procedure.	Thank you for your comment. The overview document provides a rapid review of the evidence together with the opinions of specialist advisers and patient commentary. It is used to inform IPAC in their drafting of provisional guidance. It is not changed following consultation.
10	Consultee 1 European healthcare professional (lead clinical investigator on an ongoing RCT)	**NOTE**	I am lead clinical investigator of the [redacted] Randomised Trial in Europe (www.clinicaltrials.gov; Identifier: NCT01283438)	Thank you for your comment.
11	Consultee 3 European healthcare professional (consultant for the manufacturer and investigator on an ongoing RCT)	**NOTE**	I am consultat for [redacted] and the randomized clinical trial where I am one of investigators is funded by this company	Thank you for your comment.
12	Consultee4 European healthcare professional (Investigator on an ongoing RCT)	**NOTE**	I have to disclose that I receive a research grant and honoraria for instructional courses from [redacted].	Thank you for your comment.