APPENDIX to Presacral Neurectomy (PSN) and Laparoscopic Uterine Nerve Ablation (LUNA) Policy

Prior Authorization Requirements

This service (or procedure) is considered **investigational** in all instances. If you would like to submit additional information please forward to the Prior Authorization Department.

Within five days before the actual date of service, the Provider MUST confirm with Blue Shield of California / Blue Shield of California Life & Health Insurance Company (Blue Shield) that the member's health plan coverage is still in effect. Blue Shield reserves the right to revoke an authorization prior to services being rendered based on cancellation of the member's eligibility. Final determination of benefits will be made after review of the claim for limitations or exclusions.

Questions regarding the applicability of this policy should also be directed to the Prior Authorization Department. Please call 1-800-541-6652 or visit the Provider Portal www.blueshieldca.com/provider.

Evidence Basis for the Policy

Rationale

Dysmenorrhea is defined as the occurrence of painful menstrual cramps. Primary dysmenorrhea occurs in the absence of an identifiable cause, while secondary dysmenorrhea is related to an identifiable pathologic condition, such as endometriosis, adenomyosis, or pelvic adhesions. The etiology of primary dysmenorrhea is incompletely understood but is thought to be related to the overproduction of uterine prostaglandins. Therefore, first-line pharmacologic therapy typically includes nonsteroidal anti-inflammatory drugs (NSAIDs), which reduce prostaglandin production. Oral contraceptives are another approach. Patients with secondary dysmenorrhea may be offered both NSAIDs and oral contraceptives, as well as a variety of other hormonal therapies. Patients with endometriosis frequently undergo surgery to ablate, excise, or enucleate endometrial deposits or lyse pelvic adhesions. Collectively, these surgical procedures may be referred to as “conservative surgical therapy.”

A 2005 Cochrane review of surgical interruption of pelvic nerve pathways for primary and secondary dysmenorrhea concluded that, “There is insufficient evidence to recommend the use of nerve interruption in the management of dysmenorrhea, regardless of cause" (Proctor et al., 2005).

The same authors published a systematic review in 2007 that included 1 additional study in the meta-analysis, for a total of 9 randomized trials including 773 women (Latthe et al., 2007). Eligible studies were prospective, randomized controlled trials (RCTs) comparing surgical interruption of pelvic nerve pathways to no treatment or another treatment in women with primary or secondary dysmenorrhea. Studies of secondary dysmenorrhea associated with the use of intrauterine contraceptive devices were excluded. The primary outcome in all the reviewed trials was pain relief, which was measured and reported in a variety of ways. The 2007 systematic review concluded that evidence remained insufficient to determine whether surgical interruption of pelvic nerve pathways was effective. For laparoscopic uterine nerve ablation (LUNA), questions remained concerning the durability of the procedure, the risk of anatomical distortion, and the effect on subsequent pregnancies. They further concluded that due to the difficulty of presacral neurectomy (PSN) and its related risks, this procedure should be performed by a highly skilled surgeon trained specifically in this operation, within the setting of controlled trials and with full disclosure about the potential hazards.

In March 2004 (reaffirmed in 2010), American College of Obstetricians and Gynecologists (ACOG) issued a practice bulletin on chronic pelvic pain. The practice bulletin includes the following statements:

> Presacral neurectomy may be considered for treatment of centrally located dysmenorrhea but has limited efficacy for chronic pelvic pain or pain that is not central in its location. Laparoscopic uterine nerve ablation or transaction of the uterosacral ligament also can be considered for centrally located dysmenorrhea, but it appears to be less effective than PSN. Combining LUNA or PSN with surgical treatment of endometriosis does not further improve overall pain relief.

In October 2007, National Institute for Health and Clinical Excellence (NICE) issued interventional procedure guidance number 234 on LUNA for chronic pelvic pain. The guidance states “The evidence on (LUNA) for chronic pelvic pain suggests that it is not efficacious and therefore should not be used.”

In January 2012, the Agency for Healthcare Research and Quality (AHRQ) reported in a comparative effectiveness review regarding current therapies for chronic pelvic pain (CPP) in adult women:

> Current evidence is insufficient to change current approaches to care. For this reason, use of less-invasive diagnostic and therapeutic interventions may be warranted before moving on to those that are more invasive and could be associated with increased harms. This approach may be warranted, particularly in situations where the patient is comfortable not having a definitive diagnosis. In none of the studies with comparison data was surgery in general or any specific surgical technique better than either nonsurgical intervention or the comparator technique in improving pain status in patients. Given the limited number of studies addressing heterogeneous surgical interventions and with so few being of good or fair quality, it is difficult to summarize the evidence for the effect of surgical interventions on any of the outcomes proposed. Although no surgical technique emerged as a superior method for surgical intervention, the evidence is insufficient to conclude that surgical intervention is either effective or ineffective for the treatment of CPP.

Conventional treatment plus LUNA versus Conventional treatment alone

The 2007 systematic review discussed above by Latthe and colleagues identified 2 trials that compared LUNA with diagnostic laparoscopy alone (Litchen et al., 1987; Johnson et al., 2004). The smaller trial (n=21 [3]) measured pain on a 5-point pain scale, and the other study (n=56 [4]) used a visual analog scale (VAS). A pooled analysis of these trials (2) found that, at 6 months or less follow-up, there was no significant difference between groups in pain relief (odds ratio [OR]: 1.43; 95% confidence interval [CI]: 0.56-3.69). However, at 12 months, there was greater pain relief with LUNA (OR: 6.12; 95% CI: 1.78-21.03). These studies included a relatively small number of women, and estimates of effectiveness were imprecise, as evidenced by the wide CIs.

Three trials compared LUNA plus conservative surgery to conservative surgery alone (Johnson et al., 2004; Vercellini et al., 2003; Tjaden et al., 1990). A fourth trial compared LUNA plus laparoscopic bipolar coagulation of uterine vessels with laparoscopic bipolar coagulation of uterine vessels only for women with uterine myomas (Sutten et al., 2001). No significant difference in pain relief was found in pooled analyses of 3 trials after 6 months or less follow-up (N=190; OR: 1.03; 95% CI: 0.52-2.02) or of 2 trials with up to 12 months of follow-up (N=217; OR: 0.77; 95% CI: 0.43-1.39). There were also no significant differences between groups in quality of life, anxiety, or depression.

Additional trials since the 2007 systematic review compared LUNA with diagnostic laparoscopy to diagnostic laparoscopy alone. A 2009 study from the U.K. by Daniels and colleagues included women who had chronic pelvic pain lasting longer than 6 months and who had not been diagnosed with moderate-to-severe endometriosis or major pelvic inflammatory disease. Forty-five percent of the sample had some type of visible pathology; 17% minimal endometriosis and 20% had adhesions. Laparoscopic uterine nerve ablation after diagnostic laparoscopy (n=243) was compared to diagnostic laparoscopy alone (n=244) for women with primary dysmenorrhea. The primary outcome was patient-rated pain using a 10-cm VAS. Patients were asked about 3 types of pain (noncyclical pain, dysmenorrhea, and dyspareunia). At 12-month follow-up, pain data were missing for 51 women (21%) in the LUNA group and 48 (20%) women in the control group; an additional 5 women in the LUNA group and 4 women in the control group withdrew consent during the first year of follow-up. At 12 months, there was no significant difference between groups in any of the types of pain or in the worst pain level of any type. There was also no significant difference between groups in any of the pain outcomes when the difference in pain was measured over all time points (outcomes were assessed at 3 and 6 months and 1, 2, 3, and 5 years). The median time in the study was 69 months; 72% of women had at least 5 years of follow-up. Note that actual VAS scores for each group were not reported but were represented on figures. Advantages of this study included longer-term follow-up, blinding of subjective outcomes, and randomization after inspection of the pelvis to ensure eligibility.

Later in 2010, Daniels et al. concluded in an update after performing a meta-analysis using individual patient data that LUNA did not result in improved chronic pelvic pain.

Shawki (2011) conducted a RCT in Egypt which included women with pelvic pain and excluded those with moderate to severe endometriosis or previous surgery for endometriosis or for pelvic inflammatory disease. A total of 190 women were randomized, 95 to each group. A total of 171/190 (90%) completed the 12-month follow-up. Clinical success was defined as the

percentage of women who reported no, minimal or tolerable pain during the follow-up period without hysterectomy or repeated LUNA. At 12 months, the clinical success rate was 63/86 (73%) in the LUNA group and 63/85 (74%) in the control group; the difference between groups was not statistically significant. Moreover, there was not a statistically significant difference between groups in dysmenorrhea and most other efficacy variables. The only statistically significant difference, favoring the LUNA group, was in the rate of dyspareunia.

Conclusions

Several RCTs compared conventional treatment to conventional treatment plus LUNA. The results of these trials generally indicated that outcomes of conventional treatment were similar to outcomes of conventional treatment plus LUNA. This evidence suggested that LUNA did not offer incremental benefit above that of conventional treatment for the treatment of dysmenorrhea.

Conventional treatment plus PSN versus Conventional treatment alone

No RCTs were identified that evaluated PSN for primary dysmenorrhea.

For secondary dysmenorrhea, three trials compared PSN plus conservative surgery to conservative surgical therapy alone in patients with endometriosis (Tjaden et al., 1990; Zullo et al. 2003; Candiani et al., 1992). A pooled analysis of 2 trials with 197 women found a significant difference between treatment groups, favoring the PSN group (OR: 3.14; 95% CI: 1.59-6.21). Two of the trials were published in the early 1990s.

The largest and most recent trial, published by Zullo and colleagues in 2003, randomized 141 women and included 126 women in the analysis.The primary outcome was the cure rate, defined as the percentage of patients who reported an absence of dysmenorrhea or dysmenorrhea that did not require medical treatment. At 6 and 12 months, the cure rate for the treatment and control groups was 87.3% versus 60.3% and 85.7% versus 57.1%, respectively. While there was no difference in short-term complications between the 2 groups, at 12 months, 14.3% of the PSN group reported constipation, compared to none in the control group. While the results of this trial were positive, several factors limit its interpretation. All of the surgeries were performed by one physician, which raised questions about whether the results could be generalized. In addition, although the trial reported using an intent-to-treat (ITT) analysis, 15 of the 141 randomized subjects were not included in the analysis.

An updated report in 2004 on the participants in the Zullo et al. trial found that, at 24 months, outcomes continued to be better in the PSN group and the overall complication rate in the PSN group continued to be higher. The cure rate (absence of dysmenorrhea) was higher for the PSN group (34.4%) compared to the control laparoscopy group (18%). The percentage of women with dysmenorrhea not requiring medical attention was 82% and 65.6% in the PSN and control group, respectively. However, 11 (18.3%) women in the PSN group had long-term complications consisting of bowel and urinary dysfunction, compared to none in the control laparoscopy group. This high complication rate raised questions regarding the risk-benefit ratio of adding PSN to a conservative laparoscopic therapy.

Conclusions

There was limited clinical trial evidence on the benefit of PSN for secondary dysmenorrhea. Some of these trials reported that symptoms were reduced to a greater extent with PSN compared to conventional therapy alone. However, adverse events, primarily constipation, were also increased following PSN. Further RCTs are needed to better define the risk-benefit ratio and the patient population that might benefit from this treatment.

LUNA versus PSN

The only randomized study in this group was a 1996 study by Chen and colleagues that randomized 68 patients to undergo either LUNA or PSN. The procedure was considered a success if there was at least a 50% reduction in pain. While there was no significant difference in the 2 procedures at 6 months, PSN was associated with improved pain relief compared to LUNA at greater than 6 months. However, the incidence of adverse effects was greater with PSN; specifically, 94% of patients randomized to PSN reported constipation.

Summary

The evidence was insufficient that LUNA improved health outcomes of patients with primary or secondary dysmenorrhea. Studies comparing LUNA to diagnostic laparoscopy alone did not find consistent benefit of the intervention. In addition, sample sizes were small in many studies, and there were few studies with follow-up of 12 months or longer.

The evidence on PSN for treating primary dysmenorrhea was insufficient; no randomized trials were identified. For secondary dysmenorrhea, only one recent well-conducted trial on PSN was identified; this trial found improvement in pain outcomes but also higher complication rates. The net health benefit considering the balance of risks and benefits remained unclear and need to be assessed in additional trials.

Thus, given that the evidence is insufficient, LUNA and PSN are investigational for the treatment of primary and secondary dysmenorrhea.

Benefit Application

Benefit determinations should be based in all cases on the applicable contract language. To the extent there are any conflicts between these guidelines and the contract language, the contract language will control. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Some state or federal mandates (e.g., Federal Employee Program (FEP)) prohibit Plans from denying Food and Drug Administration (FDA) - approved technologies as investigational. In these instances, plans may have to consider the coverage eligibility of FDA-approved technologies on the basis of medical necessity alone.

This Policy relates only to the services or supplies described herein. Benefits may vary according to benefit design; therefore, contract language should be reviewed before applying the terms of the Policy. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement.

Type	Number	Description
CPT	58578	Unlisted laparoscopy procedure, uterus
	64999	Unlisted procedure, nervous system
HCPC	None	
ICD9 Procedure	None	
ICD9 Diagnosis	All Diagnoses	
Place of Service	All Places of Service	

Tables

N/A

Definitions

Dysmenorrhea - defined as the occurrence of painful menstrual cramps.

Dyspareunia - pain in the labia, vagina, or pelvis during or after sexual intercourse.

Laparoscopic uterine nerve ablation - surgical procedure proposed for the treatment of dysmenorrhea and chronic pelvic pain involving the disruption of the efferent nerve fibers in the uterosacral ligament.

Presacral neurectomy - surgical procedure proposed for the treatment of dysmenorrhea and chronic pelvic pain involving the interruption of the sympathetic nerves to the uterus at the level of the superior hypogastric plexus.

Primary dysmenorrhea - occurs in the absence of an identifiable cause, the etiology is not completely understood, but is thought to be related to the overproduction of uterine prostaglandins.

Secondary dysmenorrhea - related to an identifiable pathologic condition e.g. endometriosis, adenomyosis, or pelvic pain.

Index / Cross Reference of Related BSC Medical Policies

The following Medical Policies share diagnoses and/or are equivalent BSC Medical Policies:

N/A

Key / Related Searchable Words

- Chronic Pelvic Pain
- Dysmenorrhea
- Dyspareunia
- Laparoscopic Uterine Nerve Ablation
- LUNA
- Presacral Neurectomy
- PSN

References

- Agency for Healthcare Research and Quality. Noncyclic Chronic Pelvic Pain Therapies for Women: Comparative Effectiveness, Comparative Effectiveness Review. No 41, prepared by the Vanderbilt Evidence based Practice Center under Contract No. 290-2007-10065, January 2012. Retrieved September 2012 from http://www.effectivehealthcare.ahrq.gov/ehc/products/195/808/CER41-Pelvic-Pain_20120112.pdf
- American College of Obstetricians and Gynecologists (ACOG). Chronic Pelvic Pain. ACOG Practice Bulletin no. 51, March 2004. (Reaffirmed 2010). Retrieved October 3, 2012 from http://www.guideline.gov.
- Blue Cross Blue Shield Association. Medical Policy Manual, No.4.01.17 (March 2012)
- Candiani GB, Fedele L, Vercellini P et al. Presacral neurectomy for the treatment of pelvic pain associated with endometriosis: A controlled study. Am J Obstet Gynecol. 1992; 167(1):100-3.
- Chen FP, Chang SD, Chu KK et al. Comparison of laparoscopic presacral neurectomy and laparoscopic uterine nerve ablation for primary dysmenorrhea. J Reprod Med. 1996; 41(7):463-6.
- Daniels et al. Individual patient data meta-analysis of randomized evidence to assess the effectiveness of laparoscopic uterosacral nerve ablation in chronic pelvic pain (structured abstract). Human Reproduction Update. Volume 16, Issue 6, 2010. Pages 568.
- Daniels J, Gray R, Hills RK et al. Laparoscopic uterosacral nerve ablation for alleviating chronic pelvic pain. JAMA. 2009; (9):955-61.
- Dover RW, Pooley P, Haines P et al. Prospective randomized double blind controlled trial of laparoscopic laser uterine nerve ablation in the treatment of pelvic pain associated with endometriosis. (Unpublished clinical trial 1999).

- El-Din Shawki H. The efficacy of laparoscopic uterosacral nerve ablation (LUNA) in the treatment of unexplained chronic pelvic pain: A randomized controlled trial. Gynecol Surg. 2011; 8(1):31-9.
- Johnson NP, Farquhar CM, Crossley S et al. A double-blind randomized controlled trial of laparoscopic uterine nerve ablation for women with chronic pelvic pain. BJOG. 2004; 111(9):950-9.
- Latthe PM, Proctor ML, Farquhar CM et al. Surgical interruption of pelvic nerve pathways in dysmenorrhea: A systematic review of effectiveness. Acta Obstet Gynecol Scand. 2007; 86(1):4-15.
- Lichten EM, Bombard J. Surgical treatment of primary dysmenorrhea with laparoscopic uterine nerve ablation. J Reprod Med. 1987; 32(1):37-41.
- National Institute for Health and Clinical Evidence. Laparoscopic uterine serve ablation (LUNA) for chronic pelvic pain. Interventional Procedure Guidance 234. October 2007. Retrieved October 2012 from: http://guidance.nice.org/IPG234/Guidance/pdf/English.
- Proctor ML, Latthe PM, Farquhar CM et al. Surgical interruption of pelvic nerve pathways for primary and secondary dysmenorrhea. Cochrane Database Syst Rev. 2005; (4):CD001896.
- Sutton C, Pooley AS, Jones KD. A prospective, randomized, double-blind controlled trial of laparoscopic uterine nerve ablation in the treatment of pelvic pain associated with endometriosis. Gynaecol Endosc. 2001; 10(4):217-22.
- Tjaden B, Schlaff WD, Kimball A et al. The efficacy of presacral neurectomy for the relief of midline dysmenorrhea. Obs Gynecol. 1990; 76(1): 89-91.
- Vercellini P, Aimi G, Busacca M et al. Laparoscopic uterosacral ligament resection for dysmenorrhea associated with endometriosis: Results of a randomized, controlled trial. Fertil Steril. 2003; 80(2):310-9.
- Wilson ML, Farquhar CM, Sinclair OJ et al. Surgical interruption of pelvic nerve pathways for primary and secondary dysmenorrhea. The Cochrane Library. Issue 1, 2004.
- Zullo F, Palomba S, Zupi E et al. Long-term effectiveness of presacral neurectomy for the treatment of severe dysmenorrhea due to endometriosis. J Am Assoc Gynecol Laparosc. 2004; 11(1):23-8.
- Zullo F, Palomba S, Zupi E et al. Effectiveness of presacral neurectomy in women with severe dysmenorrhea caused by endometriosis who were treated with laparoscopic conservative surgery: A 1-year prospective randomized double-blind controlled trial. Am J Obstet Gynecol. 2003; 189(1):5-10.

Policy History

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

Effective Date	Action	Reason

Effective Date	Action	Reason
3/25/1995	New Policy Adoption	Medical Policy Committee
7/1/2001	Policy Review	Medical Policy Committee
9/25/2009	Policy tile change from Laser Uterine Nerve Ablation Policy revision with position change	Medical Policy Committee
3/23/2011	Administrative Review	Administrative Review
1/11/2013	Policy Review	Medical Policy Committee

The materials provided to you are guidelines used by this plan to authorize, modify, or deny care for persons with similar illness or conditions. Specific care and treatment may vary depending on individual need and the benefits covered under your contract. These Policies are subject to change as new information becomes available.

Click here to view the policy statement for this policy

An Independent Member of the Blue Shield Association