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Rapport : Douleurs lombaires post-opératoires

Failed back surgery syndrome: To re-operate or not to re-operate? A retrospective review of patient selection and failures

Sélection des candidats à une reprise chirurgicale rachidienne. Étude rétrospective des indications et des échecs

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ABSTRACT

Introduction. – Persisting pain after spine surgery remains a challenge for the patient and the pain physician. The etiology depends on age, pathology and the interval between the first and the revision surgery. In young patients who underwent initially to discectomy, the etiology of failed back surgery syndrome (FBSS) is commonly a recurrence of herniation whereas in the elderly population, who has previously undergone a spinal fusion, persisting pain might be due to secondary sagittal unbalance associated, as a consequence, to adjacent disc disease or pseudarthrosis.
Objective. – To review the etiology of failed back surgery syndrome and to discuss the radiological work-up and the treatment strategies.
Methods. – Retrospective analysis of 39 consecutive patients diagnosed with FBSS. For all cases, the following parameters were reviewed: original diagnosis and initial surgery, interval between the last surgery and the revision procedure, final diagnosis after revision. Treatment options were discussed.
Results. – Twelve patients have undergone decompressive procedures and 27 had one or multilevel fusion for various back and/or leg pain. In group 1 (decompressive surgery), the mean age of patients who had a disc herniation was 42.2 years and 69 years for patients who had laminectomies for lumbar stenosis. In group 2 (fusion), the mean age was 63.3. Loss of lumbar lordosis in elderly after one or several laminectomy(ies) was found to be a cause of failure because of sagittal kyphosis and consecutive back pain. In the fused group, suboptimal correction of lumbar lordosis could generate a pseudarthrosis, proximal junctional kyphosis and persisting pain.
Conclusion. – Dealing with FBSS patients is far from simple but it corresponds to daily practice for spine surgeons. Clinical and radiological assessments should include a full diagnostic work-up focusing on sagittal balance. Surgical treatment and re-operation might be an option if a consistent source of pain is detected.

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RÉSUMÉ

Introduction. – Les douleurs persistantes après chirurgie rachidienne restent un problème complexe à résoudre. Les causes sont multifactorielles et dépendent de l'âge, de la pathologie originale, du délai entre la dernière chirurgie et la révision. Clairement, les patients jeunes opérés de hernie discale présentent pour la plupart une récidive discale en cas de douleurs post-thérapeutiques alors que les sujets plus âgés présentent des troubles de la balance sagittale avec comme conséquence une discopathie adjacente ou une pseudarthrose à l'origine des douleurs post-opératoires.
Objectifs de l'étude. – Revue d'une série de FBSS, analyse diagnostique et propositions thérapeutiques.
Méthodes. – Analyse rétrospective de 39 cas consécutifs de patients se présentant en consultation pour un FBSS. La série est analysée dans cet article. Le diagnostic, la chirurgie initiale, le délai entre la dernière chirurgie et celle de la révision, et les options thérapeutiques y sont discutés.

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Résultats. – Douze patients ont bénéficié de chirurgie de décompression et 27 d'arthrodèse à un ou plusieurs niveaux pour des lombalgies associées ou non à des radiculalgies. Dans le groupe 1 (chirurgie de décompression), l'âge moyen pour les patients ayant bénéficié de chirurgie discale est de 42,2 ans et de 69 ans pour les patients ayant subi une ou plusieurs laminectomie(s) pour canal lombaire étroit. Dans le groupe 2 (chirurgie d'arthrodèse), l'âge moyen est de 63,3 ans. La décompensation de l'équilibre sagittal après laminectomie(s) lombaire(s) peut être une cause de douleurs persistantes. Une correction insuffisante de la lordose lombaire chez les patients ayant bénéficié d'arthrodèse est à l'origine de douleurs par pseudarthrose ou discopathie adjacente.
Conclusion. – La prise en charge des douleurs après chirurgie rachidienne est complexe et doit inclure une évaluation minutieuse clinique et radiologique. Il est indispensable de bien évaluer le profil sagittal de chaque patient adressé pour douleurs persistantes après chirurgie. Certains patients peuvent justifier d'une chirurgie de révision si une cause plausible est mise en évidence.
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1. Introduction

Failed back surgery syndrome (FBSS) is a confusing term used to describe a diverse group of spinal disorders in patients suffering from persistent pain after back surgery. FBSS is actually a misnomer, as it is not a syndrome, but simply describes the condition of patients experiencing "failed back surgery".

FBSS is a non-specific term with regards to pathology, severity of pain, indication or type of surgery. It affects 15 to 40% of patients following spine surgery and constitutes one of the major problems in health care.

No predictive factors for FBSS have been identified, but by far the most common reason for failure is that the target addressed by surgery was not actually the source of the patient's pain.

FBSS can be due to many causes, ranging from simple failure to achieve the surgical goals (decompression and/or fusion) to inadequate surgery that erroneously addressed an unrelated radiological lesion resulting in useless treatment and failure.

2. Materials and methods

A retrospective consecutive series of 39 patients referred for FBSS was analysed. Patients were examined by a single spine surgeon in a single institution between June and November 2012. All patients had a history of at least one lumbar spine surgical procedure before the consultation. The minimum interval between initial surgery and referral was 9 months.

Before treatment, all patients were submitted to careful reassessment of the primary etiology in order to detect and exclude any patients with an incorrect diagnosis masquerading as a surgically treatable spinal disorder [1–7].

Two groups of FBSS patients were distinguished in this series: the first group consisted of 12 patients who had previously undergone simple decompression surgery and the second group consisted of 27 patients who had undergone spinal fusion with instrumentation.

The characteristics of the first group of patients with previous decompression are summarized in Table 1. Two different populations were clearly distinguished in this group: a population of younger patients with a mean age of 42.2 years, referred for failure of surgical treatment of radicular pain due to disc herniation. The diagnosis was usually based on clinical examination and magnetic resonance imaging (MRI). One patient in this group with predominant neuropathic radiculopathy was referred to the pain clinic for transcutaneous electrical nerve stimulation or spinal cord stimulation (SCS). Patients with recurrent radicular pain and a positive diagnosis of recurrent disc herniation on MRI were treated by redo microdiscectomy. Patients complaining of axial back pain after one or two surgical microdiscectomies were treated by spinal fusion (transforaminal lateral interbody fusion [TLIF] or anterior lateral interbody fusion [ALIF]).

The characteristics of the second group of patients with previous spinal fusion are summarized in Table 2.

3. Results

Thirty-nine consecutive patients referred for FBSS were screened: 12 had previously undergone decompression surgery and 27 had previously undergone spinal fusion.

Seven patients in the decompression group had a kyphotic lumbar spine after direct decompression by laminectomy for lumbar stenosis. One patient in this subgroup was treated conservatively

Table 1
Group 1. Summary of demographic features, original diagnosis, and treatment options.
Groupe 1. Résumé des caractéristiques démographiques, diagnostic initial et options de traitement.

Group 1	Age/Gender	Original diagnosis	Original surgery	# surgeries	Interval[a] (Y)	Diagnosis at referral	Treatment
1	43/F	L5–S1 DH	Microdiscectomy	1	1	Recurrence	Microdiscectomy
2	32/M	L4–L5 DH	Microdiscectomy	2	1.3	BP/L5 radiculopathy	TLIF L4–L5
3	64/M	Lumbar stenosis	L3–L4 laminectomy	1	4	BP	Conservative
4	76/F	Lumbar stenosis	L2–L5 laminectomy	2	7	BP	SPO/T12–S1 fusion
5	36/F	L4–L5 DH	Microdiscectomy	1	3	L5 neuropathic pain	Pain clinic
6	58/M	Lumbar stenosis	L2–L5 laminectomy	2	3	BP	SPO/T12–S1 fusion
7	67/F	Lumbar stenosis	L3–L5 laminectomy	2	7	BP/L5 radiculopathy	L4–S1 fusion
8	79/M	Lumbar stenosis	L3–L5 laminectomy	2	7	BP/Sag kyphosis	SPO/T12–S1 fusion
9	65/F	Lumbar stenosis	L5 laminectomy	1	5	Leg pain	L5 revision
10	74/F	L4–L5 Deg SPDL	L4–L5 laminectomy	2	5	BP/Sag kyphosis	L3–S1 fusion
11	48/M	L5–S1 DH	Microdiscectomy	2	2	BP/L5 radiculopathy	ALIF L5–S1
12	52/F	L5–S1 DH	Microdiscectomy	1	2	BP	ALIF L5–S1

F: female; M: male; DH: discal hernia; Deg SPDL: degenerative spondylolisthesis; BP: back pain; TLIF: transforaminal lumbar interbody fusion; ALIF: anterior lumbar interbody fusion; SPO: Smith-Petersen osteotomy; Y: year; # surgeries: numbers of surgeries.
F : femme ; M : male ; DH : hernie discale ; Deg SPDL : spondylolisthésis dégénératif ; BP : douleur du dos ; TLIF : fusion intervertébrale lombaire par voie transforaminale ; ALIF : fusion intervertébrale lombaire antérieure ; SPO : ostéotomie de Smith-Petersen ; Y : année ; # surgeries : nombre de chirurgies.
[a] Interval between first and last surgery.
[a] *Intervalle entre la première et la dernière chirurgie.*

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