Pain after total hip arthroplasty: a psychiatric point of view

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Abstract After total hip arthroplasty (THA), many studies report that a small percentage of patients mention painful symptoms, whose origin remains more or less obscure. We investigated 1,000 patients who had undergone a THA at least one year before their inclusion in the survey protocol. Among these 1,000 patients, 64 were complaining of pain in the region of the operated hip. These were later examined and investigated, both clinically (physical and psychiatric examination) and paraclinically (radiography, biology). Those requiring it received adequate treatment and the others were only regularly followed up. We identified the cause of all but one patient's pain. In all cases except one, the symptoms of pain without physical cause had a psychiatric origin. The results of our study show that, if the clinical picture is not perfectly clear, a psychiatric screening before surgery could contribute to decreasing the incidence of pain syndrome after THA.

Résumé Comme le rapportent de nombreuses études, un pourcentage limité de patients conservent des douleurs après prothèse totale de hanche, douleur dont l'origine reste relativement obscure. Nous avons analysé 1000 patients ayant bénéficié d'une prothèse totale de hanche dont le recul était au moins égal à un an. Parmi ces 1000 patients, 64 se plaignaient de douleurs dans la région de la hanche. Ces patients ont été explorés sur le plan clinique, paraclinique et psychiatrique. Certains ont bénéficié d'un traitement, d'autres ont été seulement régulièrement suivis. Nous avons identifié

l'origine de la douleur chez tous les patients (sauf un). Les douleurs qui n'avaient pas une origine somatique étaient d'origine psychiatrique. Les résultats de notre étude montrent que si le tableau clinique n'est pas tout à fait clair, un examen psychiatrique réalisé avant la chirurgie peut contribuer à diminuer les syndromes douloureux après intervention chirurgicale.

Introduction

The majority of patients who undergo total hip arthroplasty (THA) feel well and quickly forget the prosthetic addition, typically within a few months. In some rare instances, however, patients complain of more or less specific post-surgery pains. As noted by Dambreville [3], it is difficult to study these pains for a number of reasons. Firstly, pain cannot be easily quantified, although there are approximate (partial) measuring scales. Furthermore, in addition to handling objective clinical data, the study of pain must allow for the influence of subjective elements. Often, patients tend to confuse successful post-surgery THA satisfaction with the absence of pain—two things that are not strictly equivalent. Though the absence of pain contributes to a general feeling of satisfaction, it is not the only factor; for example, some patients are still satisfied, despite tolerable levels of pain [13]. Why do some patients suffer post-surgical THA hip pain then? Can it be treated? And, if not, could it be that some of it is neither of orthopaedic nor of psychiatric origin?

In our quest for some answers to the above questions, we carried out a survey on 1,000 patients who underwent THA. This prospective study took place between 2004 and 2006. It was co-directed by a psychiatrist and several senior surgeons. Its object was to evaluate the frequency and

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causes of THA post-surgical pain and also the means whereby it could be alleviated. Specifically, we sought to determine:

1. The proportion of patients reporting THA post-surgical pain. Patients operated on within the past 12 months were excluded, since a previous study [16] showed that it sometimes took at least 12 months for patients to “forget” about the prosthetic addition.
2. The various causes leading to pain and the potential links between multiple causes.

Our study strove to define the best way to handle (face) reports of pain lacking a specific organic location and origin. Finally, we pondered the eventual precautions which, taken prior to the initial THA surgery, might avert the onset of pain.

Materials and methods

This prospective study took place between 2004 and 2006. Starting from a given date, we included all of the patients who underwent THA surgery in our own ward or elsewhere more than 12 months prior to that date, all of whom had also attended clinical follow-up sessions with one of our senior surgeons. Regardless of the date, the chosen methods and the ward in which surgery took place, we surveyed 1,042 patients in total (20% of whom suffered from bilateral THA, though none of them, it must be noted, ever complained of bilateral pain), including 64 who had spontaneously mentioned “hip pain” during the interviews. Only 35 out of 64 had undergone surgery in our own ward. These 19 men and 45 women, aged 24 to 82, were subjected to both somatic and psychiatric examinations. The somatic examination involved clinical, radiological and biological trials, in search of post-surgical complications. The psychiatric examination carried out by the ward’s consulting psychiatrist involved a semi-directed interview centred on the history of the maligned prosthesis, as well as a psychiatric evaluation based on the DSM standard.

The interview touched on the following:

1. Biographic data and medico-surgical history: name, surname, age, occupation, marital status, leisure, living quarters, past surgery, medical history etc.
2. The state of the hip (on the painful side): details on the initial THA surgery and subsequent developments. Were the patients disappointed? What were they hoping for? Why had the initial intervention—and any subsequent ones—taken place? Did the operation have an impact on their personal, professional or family lives and, if so, what was it exactly? Had they ever wished that they had not been operated on in the first place?

3. A precise but spontaneous and free-flowing description of the pain by the patients themselves: where did the pain manifest itself? What part of the body did it spread to? What cause did they ascribe it to, i.e. how did they *interpret* it? What kind of pain was it anyway? Was it relieved, or set off, by something specific?
4. Other facets of the patients’ life: had they experienced other disappointments? Had any relatives or friends undergone similar surgery and, if yes, what did the patients make of it? How did they feel about ageing?
5. Did the patients wish to touch on other topics? Was there anything specific on their minds at the moment?

We also noted whether the pain seemed real (i.e. “lived,” rather than narrated) and quantified it on the scales of the EVA standard evaluation, a scale for evaluating pain from 0 (painless) to 10 (painful). We avoided using the traditional scales of appraisal of quality of life or even the Merle d’Aubigné grading score, since prior studies [16] have shown that a high score on these scales may not always correlate with the absence of spontaneous admissions of pain.

Patients shown to suffer because of an actual somatic cause were re-operated on whenever necessary; some were given medical treatment and all attended several follow-up sessions for at least 12 months following surgery to alleviate the pain disclosed during the selection interviews. At the end of that year, a new round of consultations with the surgeons and psychiatrist provided a conclusive evaluation of the patient’s development from a somatic and psychiatric point of view (again, the psychiatric evaluation involved a semi-directed interview based on the DSM IV standard criteria and the EVA quantification of pain). In the course of the study, one patient died and the whereabouts of six others became unknown.

Results

The clinical, biological and radiological investigations carried out by the surgeons, which match the examinations summed up in Bozic and Rubash’s decision-making algorithm [1], yielded the following results (see Table 1):

1. Seven instances of infection found among those operated on elsewhere, for whom a revision arthroplasty (RA) was planned. Three of these patients had an associated psychiatric pathology. The first, a woman widely frustrated by the overall experience, was subject to a serious neurosis and quit the study without leaving any contact information. The second, a woman afflicted with paranoia, had a revision operation and reported no further evidence of pain, despite the enduring psychiatric condition. The third and final patient exhibited signs of paranoid psychosis with spectacular psychia-

Table 1 Somatic and psychiatric status of the patients at the beginning of the study

Status at inception (number of patients)		Psychiatric status				Total
		Normal	Severe anxio-depressive pathology	Moderate anxio-depressive pathology	Psychosis	
Somatic status	Infection	4	1	–	2	7
	Aseptic loosening	12	2	–	–	14
	Others	–	–	–	–	–
	sciatic pain	–	1	–	–	1
	minor causes	9	3	6	–	18
	No anomaly at the beginning of the study	8	13	1	2	24
Total	–	33	20	7	4	64

tric effects. In this case, psychiatric trouble took the forefront and delayed the diagnosis of a post-surgical infection, although after RA had taken place, the patient did not report any subsequent pain.

- Fourteen instances of aseptic loosening, for whom a full RA was planned. All 14 underwent further surgery and two had an associated psychiatric condition. After RA, one psychiatric trouble-free patient disappeared, 11 did not report any further pain (EVA count under 2) and the two patients afflicted with chronic anxio-depressive pathologies reported a continuing pain after re-intervention (EVA count over 5).
- One instance of sciatic pain with instability of the hip (originally operated on elsewhere for osteoarthritis). The patient exhibited pathological feelings of bereavement and a hysterical neurosis with all the symptoms of a major anxio-depressive condition (and an EVA count of 8). Surgical treatment involved the neurolysis of the sciatic nerve in conjunction with a hip brace and additional psychiatric care (psychotherapy and antidepressants), which were generally well-received by the patient. The pain was considerably reduced (EVA count less than or equal to 3) and the situation was tolerable but the psychological balance remains precarious and is likely to deteriorate with every additional surgical intervention.
- Eighteen instances of minor somatic cause (trochanteric bursitis, gluteus medius, tendinopathy, ilio-psoas bursitis, back pain). All of these patients had an initial EVA count of 6 or more. One of the patients had excision of the bursitis, which made him feel better (his psychiatric evaluation was unremarkable). Two patients were lost during follow-up. Among the remaining 15, nine had a psychiatric condition (neurotic pathologies and anxio-depressive symptoms). The 15 patients received multidisciplinary care (rheumatological, physical and psychiatric, as directed). Their evolution was positive (EVA counts under 3), save for three cases of acute psychiatric

pathology. These conclusions are in agreement with those of a study on the “psoas conflict” and THA material [9].

- The common somatic study of the remaining 24 patients did not uncover any specific anomalies pointing to the source of the patient’s pain (EVA count over 6) after THA. On the other hand, the psychiatric study uncovered evidence of 16 instances of associated psychiatric pathologies; namely, one case of deficient psychosis under tutelage (check), one case of paranoid psychosis with a record of sectioning and 14 cases of anxio-depressive pathology in a neurotic context.
- Among the 16 patients with a psychiatric condition, the expression of hip pain is entangled with the pathology itself, which, clearly, is a problem [15]. Two of them improved partially thanks to the administration of antidepressants (EVA counts dropped from 8 to 3). Among the eight patients free of psychiatric pathology (see Table 1), the follow-up sessions (see Table 2) confirmed a positive evolution for two of them (the pain levels dropped), as well as a prosthetic problem requiring further treatment, for the remaining two cases. In the course of the study, one died and two lost contact. The outstanding case remains enigmatic: this lone female patient continues complaining of hip pain,

Table 2 Status at study completion of the eight patients without somatic nor psychiatric anomaly at beginning of the study

Final status at study completion of the eight patients	Number of patients
Lost during follow-up	2
Died	1
Favourable evolution	2
Discovery of somatic abnormalities	2
Enigmatic patient	1
Total	8

despite conclusive tests that rule out any orthopaedic, psychiatric or general medical cause for the ailment.

Discussion

The analysis of the study's final results confirms our initial suspicions:

1. If the prosthetic addition at the source of the pain is subject to an infection or to an aseptic loosening, the surgical treatment of the complication secures complete relief from pain in nearly all cases, regardless of the psychiatric condition of the patient. The only instance in which RA, following a loosening of the prosthesis, did not bring any relief from hip pain involved a LCH patient beset by a massive neurotic appropriation of her own ailment [14]. Any associated psychiatric condition is important and must be treated in its own right but it should not distract the evaluator from the possibility of serious surgical complications.
2. With regards to the so-called minor anomalies, interpreting the cause of pain is a more complex task. Indeed, it is sometimes difficult to know whether there is a causal link between the observed anomaly and the patient's expression of pain. In some cases (19 out of 1,000 in this study), the surgeon will identify a small anomaly of the prosthesis and give it a name, which is another way of acknowledging the legitimacy of the patient's claims, i.e. another way of taking it seriously, while offering reassurances that the situation is hardly critical and that whatever pain is caused by this small anomaly will ultimately go away.
3. When the "cause" of the pain remains unidentified by the surgeon, despite a full clinical, radiological and biological survey, we usually have to face a clear psychiatric pathology unheeded in the run-up to the first THA (this applied to three out of four patients affected). The net effect is a vicious circle whereby further surgery worsens the psychiatric pathology and the deterioration of the patient's psychiatric condition undermines the benefits of hip surgery, all of which dictate the dispensation of multidisciplinary care.
4. In the closing stages of the study, we are still faced with the riddle of the lone patient devoid of any arthroplastic anomaly and seemingly free of any psychiatric pathologies. This patient had not consulted with a professional in the run-up to the first surgical intervention, as there was no evidence of any psychiatric condition to prompt the surgeon to ask for specialised assistance in this matter. Year in year out, she describes repetitively and, sometimes *verbatim*, the same permanent bouts of

pain. From an orthopaedic point of view, it could be that, in the future, we shall discover some hitherto undetectable anomaly.

The question of the advent and the persistence of hip pain following THA remains a little fraught, as evidenced by the scant literature on the subject.

The operated hip does not actually hurt; in the mercifully uncommon occurrence of pain in the wake of THA, one has to look for causes "in the prosthesis" instead (either by infection or aseptic loosening) or consider the possibility of some extrinsic cause located in the general region of the hip.

In recent years, the means of investigating the presence of local causes—even minor ones—have progressed and the number of "baseless" painful prosthetic additions has decreased [17], while the handling of patients has steadily improved.

The methods and timing of these investigations are refined in the minute search for the multiple and potentially intertwined causes of post-THA pain [5, 7]. The occasionally complex treatment is hard to undertake but it is important to avoid another operation in response to potential feelings of "pain" or "disappointment" in the absence of a clear diagnosis of pain [19]. For some time now [18], the potential dissatisfaction of the patient following THA has been an indirect means of evaluating the presence of post-THA pain, most notably when the latter appears to be baseless, or even linked to some psychiatric condition, however mild [2, 8, 10].

We now know, without hesitation, that the period leading to the intervention, i.e. when the patient is waiting to be operated on, deserves our undivided attention on two counts. First, we ought to properly evaluate the patient's expectations from surgery and detect the potential presence of psychopathological peculiarities that need to be addressed [4, 12]. Second, we should convey to the patient some information prior to the intervention, which may contribute, in many cases, to the decrease of post-surgical pain [6, 11].

Conclusion

Total hip arthroplasty (THA) is an increasingly common surgical intervention that usually leads to a spectacular increase in the patient's quality of life. Post-THA pain is quite rare.

Our study shows that most of the post-THA complaints of pain with no established orthopaedic origin are usually of psychiatric nature. In addition, when neither somatic nor psychiatric cause can be established in a first stage examination, a further follow-up may later reveal a somatic aetiology.

We, therefore, recommend that, should some doubt arise prior to the undertaking of THA, surgeons do not hesitate in requesting a psychiatric evaluation, in order to assess precisely the patient's expectations and detect any potential psychiatric pathology, even minor, that should be addressed prior to the operation.

Thanks to these precautionary measures, the occurrence of the post-THA pain syndrome will probably significantly decrease.

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