Which Should Be Operated on First—The Spine or the Hip?
A Survey-Based Study on Treatment Order in Patients with Concurrent Degenerative Disorders of the Hip and Spine

Pablo D. López,[*] Santiago L. Iglesias,[*] Francisco J. Nally,[**] Bartolomé L. Allende[*]
[*]*Orthopedics and Traumatology Service, Sanatorio Allende, Córdoba, Argentina.*
[**]*Associated Traumatologists of Mar del Plata, Argentina.*

ABSTRACT

Introduction: In patients presenting with both hip osteoarthritis (OA) and spinal pathology, and where symptoms from both conditions are severe enough to warrant surgical intervention, determining the optimal order of treatment can be challenging. **Objective:** To identify surgeons' preferences and the rationale behind the treatment order in patients with hip OA and five different lumbar spine disorders. **Materials and Methods:** A survey-based study was conducted among hip and spine specialists. Respondents were asked which condition they would operate on first in five clinical scenarios involving hip OA combined with: 1) lumbar spinal stenosis with neurogenic claudication, 2) low-grade lumbar spondylolisthesis with radicular pain, 3) lumbar disc herniation with muscle weakness, 4) degenerative lumbar scoliosis with sagittal imbalance, and 5) thoracolumbar disc herniation with myelopathy. **Results:** The percentage of hip specialists who recommended addressing the hip first was: 45% for scenario 1, 61% for scenario 2, 20% for scenario 3, 71% for scenario 4, and 26% for scenario 5. Among spine specialists, those percentages were: 56%, 69%, 9%, 77%, and 16%, respectively. There was no consistent agreement between specialists from different fields—or even within the same specialty—as indicated by a low kappa concordance index across all scenarios. **Conclusions:** Given the low level of agreement among both hip and spine surgeons, interdisciplinary discussions are essential when managing complex cases. An individualized treatment plan should be developed for each patient, particularly when the spinal pathology is more complex.

Keywords: Spine; hip; survey.
Level of Evidence: IIb

¿Qué debería operar primero? ¿La columna o la cadera? Estudio basado en encuestas sobre el orden del tratamiento para pacientes con trastornos degenerativos concurrentes de la cadera y la columna

RESUMEN

Introducción: Cuando los pacientes tienen osteoartritis de cadera y enfermedad de la columna vertebral, y los síntomas de ambos cuadros son lo suficientemente graves como para justificar la cirugía, puede ser difícil decidir el orden óptimo de tratamiento. **Objetivo:** Determinar la preferencia y la justificación del orden del tratamiento en pacientes con artrosis de cadera y 5 trastornos lumbares diferentes. **Materiales y Métodos:** Estudio basado en encuestas a especialistas de cadera y de columna sobre qué cuadro operar primero en 5 escenarios clínicos de osteoartritis de cadera y 1) canal estrecho lumbar con claudicación neurológica; 2) espondilolistesis lumbar de bajo grado con dolor radicular; 3) hernia de disco lumbar con pérdida de la fuerza muscular; 4) escoliosis lumbar degenerativa con desequilibrio sagital; 5) hernia de disco toracolumbar con mielopatía. **Resultados:** El porcentaje de especialistas en cadera que recomendaron operar la cadera primero fue del 45% para el escenario 1; 61% para el escenario 2; 20% para el escenario 3; 71% para el escenario 4; 26% para el escenario 5. No hubo acuerdo entre los cirujanos de ambas especialidades, ni siquiera entre los de la misma especialidad, con un índice de concordancia kappa bajo en todos los

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casos. **Conclusiones:** Como la concordancia dentro de cada especialidad es baja, en casos individuales complejos, los cirujanos de columna y de cadera deben entablar una discusión interdisciplinaria y desarrollar un concepto de terapia individualizada para cada paciente, sobre todo cuando la enfermedad de columna es más compleja.

Palabras clave: Columna; cadera; encuesta.

Nivel de Evidencia: IIb

INTRODUCTION

Patients with symptomatic osteoarthritis of the hip often present with concomitant lumbar or thoracolumbar spine disorders.[1,2] In these patients, treatment priority is usually determined by the severity and location of symptoms, impact on activities of daily living, and patient preference. However, when the symptoms of both conditions are severe enough to warrant surgical intervention, determining the optimal order of treatment can be challenging. Patients with lumbar symptoms or prior lumbar fusion are known to experience more complications—such as dislocation—and report lower satisfaction following total hip arthroplasty (THA).[2,3] Conversely, one study suggested that patients with lumbar symptoms and simultaneous hip osteoarthritis may experience partial relief of back symptoms after THA and may subsequently not require spine surgery.[4]

The primary objective of this study was to assess the preference and rationale for the order of treatment in patients with hip osteoarthritis and five distinct lumbar spine disorders. The hypothesis was that surgeons specializing in THA would differ in their preferred treatment sequence from those specializing in spine surgery.

MATERIALS AND METHODS

In collaboration with the *Argentine Society of Spine Pathology* (SAPCV) and the *Argentine Association for the Study of the Hip and Knee* (ACARO), an electronic survey was distributed to 480 members of SAPCV and 370 members of ACARO. A total of 167 responses were received (response rate: 20% overall; 23% for ACARO and 15% for SAPCV). The survey can be accessed at: https://docs.google.com/forms/d/e/1FAIpQLSe7YxWA_oVQ-Io50WsDpEAhTkgd4u46ZkjQHx52TnazJdL5wEw/viewform?usp=sf_link.

A survey-based study was conducted using five clinical scenarios involving concurrent hip osteoarthritis and common lumbar spine disorders. The goal was to obtain professional opinions on the preferred order of surgical treatment. The clinical scenarios presented were as follows:

Case 1: Hip osteoarthritis and lumbar spinal stenosis with neurogenic claudication.

Case 2: Hip osteoarthritis and low-grade lumbar spondylolisthesis with radicular pain.

Case 3: Hip osteoarthritis and lumbar disc herniation with muscle weakness.

Case 4: Hip osteoarthritis and degenerative lumbar scoliosis with sagittal imbalance.

Case 5: Hip osteoarthritis and thoracolumbar disc herniation with myelopathy.

Responses to the five scenarios were compared using percentage distribution and the kappa concordance index to evaluate inter-rater agreement (scale: 0.1–0.2 = poor; 0.21–0.4 = acceptable; 0.41–0.6 = moderate; 0.61–0.8 = good; 0.81–1 = very good). The aim was to assess consistency between responses and to identify patterns leading to new insights.

Descriptive statistics (frequency, central tendency, and variability) were calculated. Excel and InfoStat statistical software were used to georeference participating surgeons. Data were recorded in contingency tables. Data consistency was evaluated by correlating studied variables, and the results were illustrated using bar and pie charts to facilitate interpretation and enhance clarity.

RESULTS

A total of 850 professionals were surveyed, and 167 responded: 88 specialized in arthroplasty and 79 in spine surgery. Sixty-three respondents practice in the Autonomous City of Buenos Aires and the Province of Buenos Aires, while the remainder are distributed throughout Argentina. The overall mean number of years in practice was 18 (range 1 to >40 years) (Figure 1).

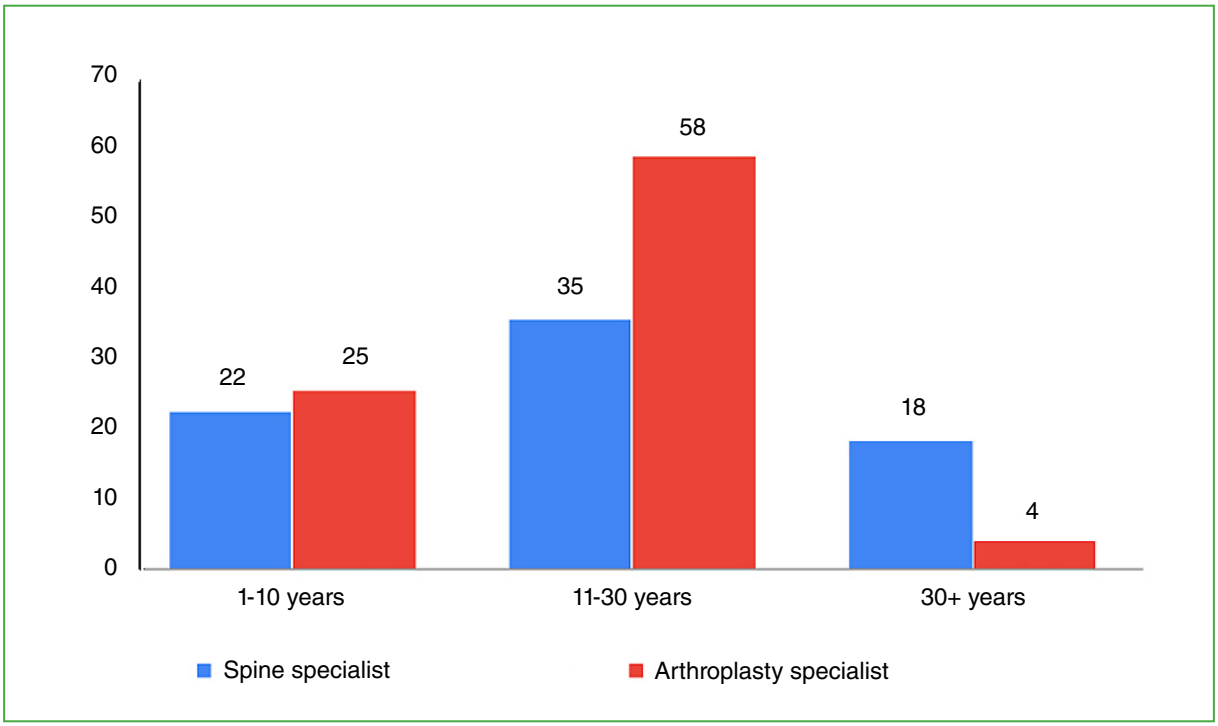

Figure 1. Years of experience according to specialty.

When assessing which surgery should be performed first in each clinical scenario, inter-specialty agreement was low, as demonstrated by the kappa concordance index (Table, Figure 2).

Table. Which surgery should be performed first, according to the different scenarios.

	Hip surgeons	Spine surgeons	Kappa
Scenario 1 Osteoarthritis plus lumbar spinal stenosis	55% Spine first	56% Hip first	0.136
	45% Hip first	40% Spine first	
Scenario 2 Osteoarthritis plus spondylolisthesis	61% Hip first	69% Hip first	0.070
	30% Spine first	24% Spine first	
Scenario 3 Osteoarthritis plus lumbar disc herniation	79% Spine first	89% Spine first	0.097
	20% Hip first	9% Hip first	
Scenario 4 Osteoarthritis plus degenerative lumbar scoliosis	71% Hip first	77% Hip first	0.047
	25% Spine first	21% Spine first	
Scenario 5 Osteoarthritis plus thoracolumbar disc herniation with myelopathy	72% Spine first	84% Spine first	0.103
	26% Hip first	16% Hip first	

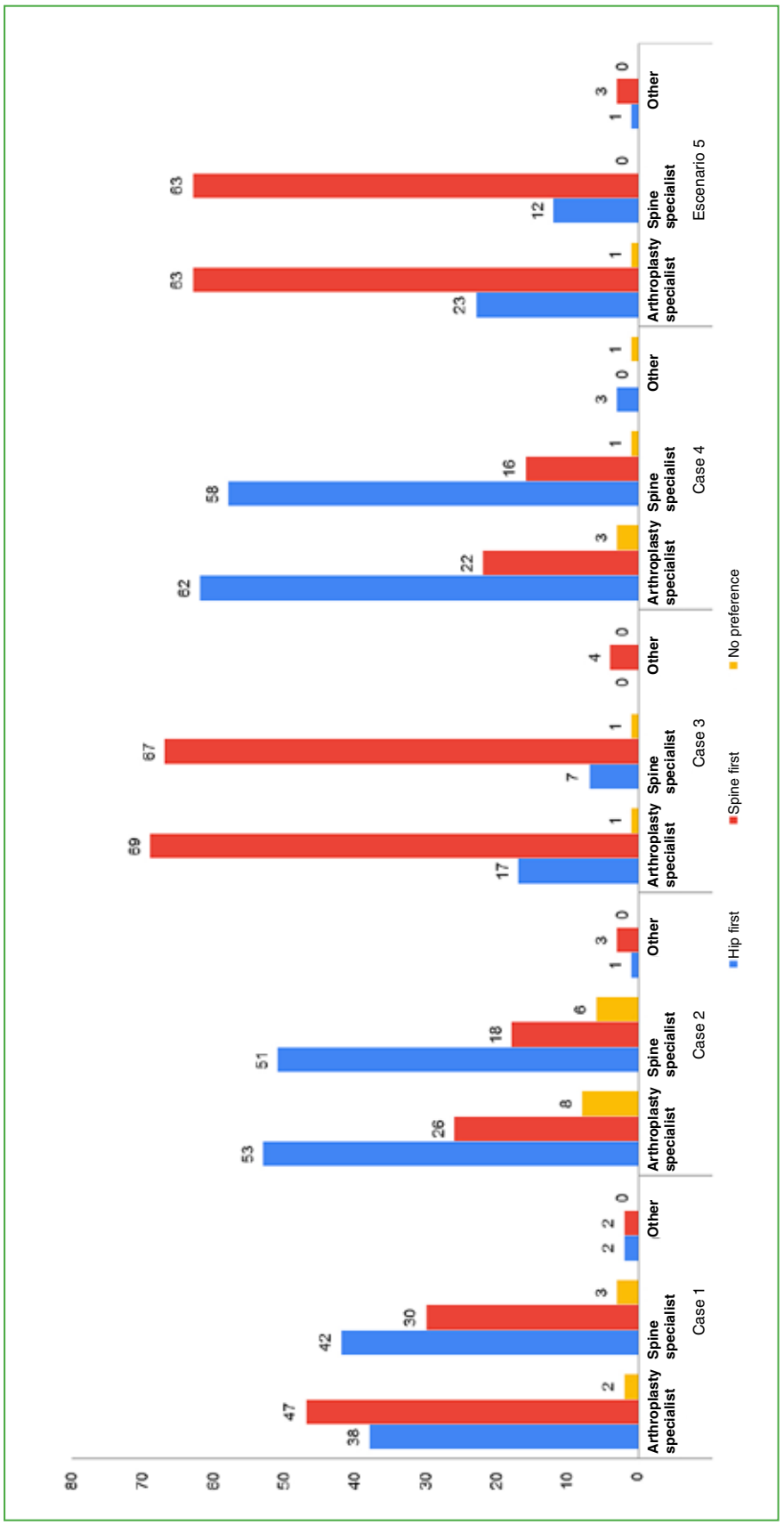

Figure 2. Type of surgery chosen according to specialty, distributed by scenario.

Among arthroplasty surgeons, the percentage recommending "hip first" surgery varied significantly across scenarios. The highest percentage was observed in Scenario 4 (hip osteoarthritis plus degenerative lumbar scoliosis, 71.3%), while the lowest was in Scenario 3 (hip osteoarthritis plus lumbar disc herniation, 20%). Conversely, spine surgeons most frequently recommended "spine first" surgery in Scenario 3 (89%) and least frequently in Scenario 4 (21%).

Overall, the variation in treatment preference among specialists recommending "hip first" across the five scenarios was statistically significant, as confirmed by concordance index analysis. However, in Scenarios 2 and 4, the concordance index indicated particularly low agreement between specialties and treatment preferences (Figure 3).

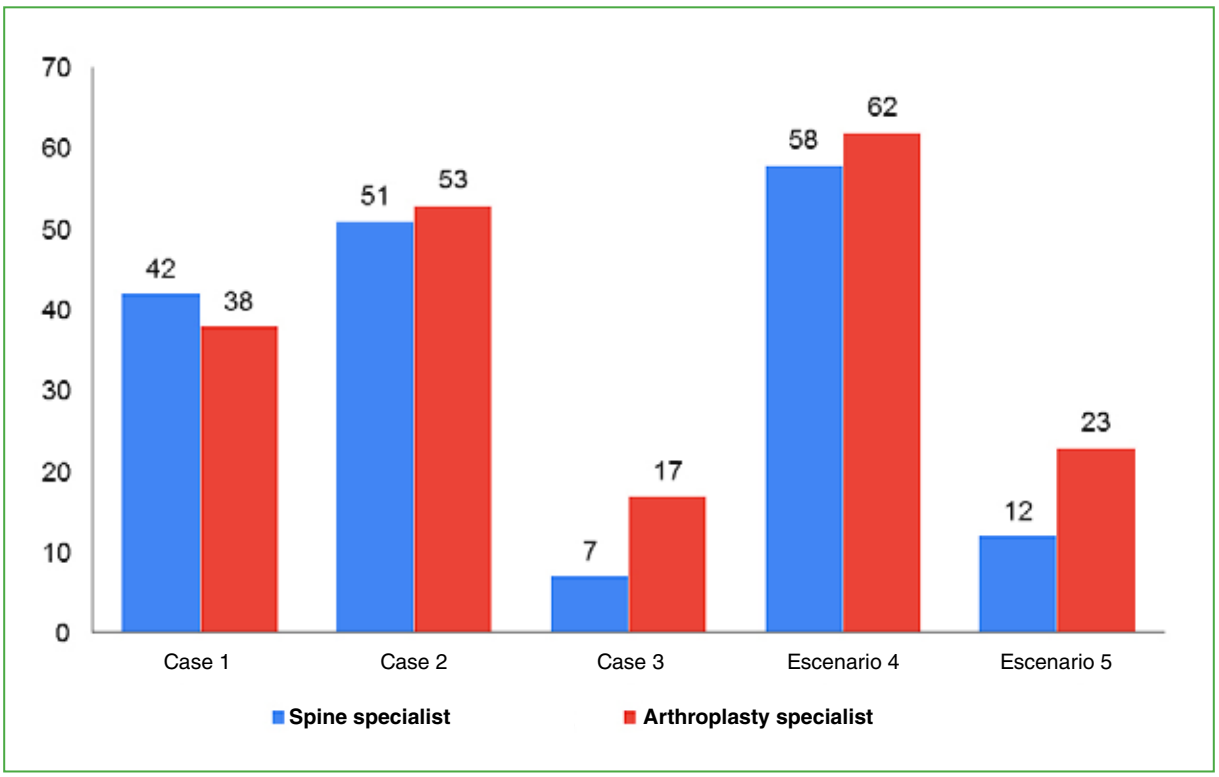

Figure 3. Choice of "hip first" surgery.

When comparing both groups of specialists across scenarios, greater concordance was observed in recommending "spine first" surgery in Scenarios 3 and 5, with more variability in the remaining scenarios (Figure 4). In some cases, there was no clear preference between operating on the spine or the hip first.

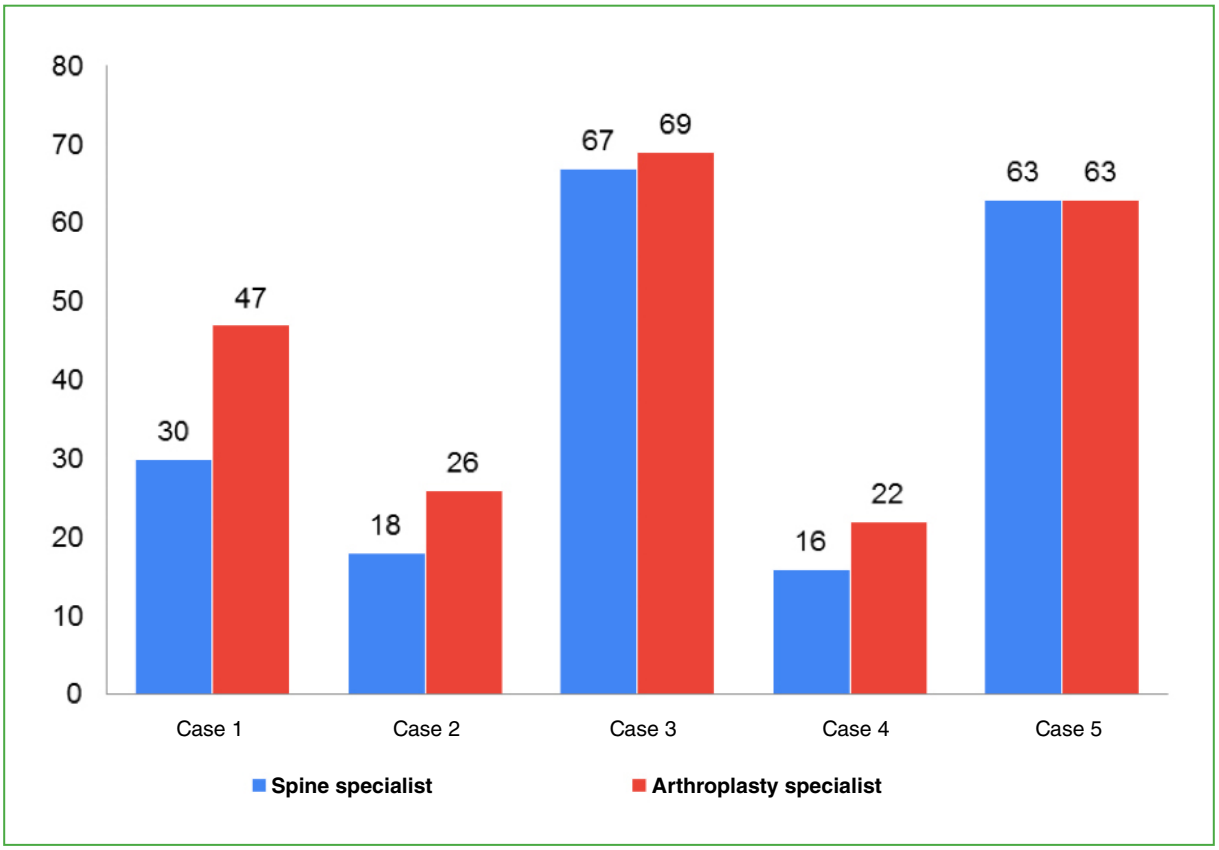

Figure 4. Choice of "spine first" surgery.

Scenario 1 was unique in that there was not only a lack of intra-specialty consensus, but also a reversal of inter-specialty preferences: 55% of hip specialists recommended "spine first," whereas 56% of spine specialists recommended "hip first."

Prosthesis selection also varied by specialty and clinical scenario. Among arthroplasty surgeons, notable differences were observed in prosthesis choice depending on the case. Similar variability was found among spine specialists. In Scenarios 2, 3, and 5, the most frequently chosen prosthesis was the cementless primary prosthesis (61%, 66%, and 43%, respectively). In Scenarios 1 and 4, the dual mobility prosthesis was the most commonly selected (45% and 55%, respectively) (Figure 5).

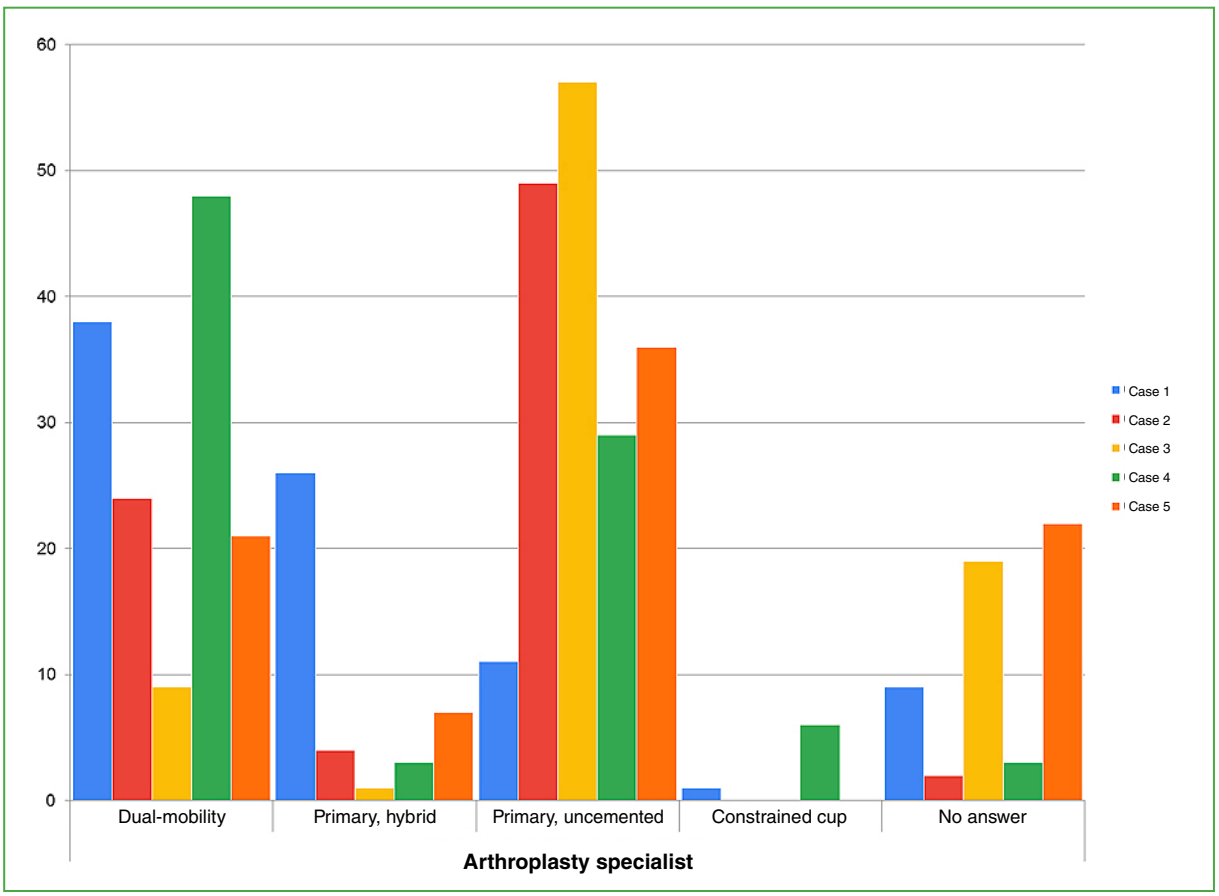

Figure 5. Choice of prosthesis type by arthroplasty specialists.

DISCUSSION

Total hip arthroplasty (THA) is considered the most successful operation in orthopedics and has been described as "the surgery of the century"[5] because it reliably meets patients' expectations.

This procedure effectively reduces or eliminates pain and improves joint mobility, thereby enhancing quality of life. However, recent studies show that up to 40% of patients with symptomatic hip osteoarthritis also suffer from degenerative lumbar spine disease,[1,2,6] and up to 4.5% undergo lumbar spine surgery following THA.[2] This association is linked to lower patient satisfaction and diminished quality of life. Furthermore, several studies report a 16-fold increase in THA dislocation rates and a 10-fold increase in revision rates when THA is performed after lumbar fusion.[7,8] Given this complex interaction between the two conditions, it remains controversial whether—and in which cases—THA can relieve spinal symptoms.

In a prospective study of 25 patients with hip osteoarthritis and lumbar spine symptoms, THA reduced low back pain intensity and Oswestry Disability Index scores[9] by 35% and 34%, respectively.[10] These findings highlight the need to establish a consensus on the order of surgical treatment in patients with coexisting symptoms in both anatomical regions. Resolution of one condition may lead to symptom improvement in the other, making it essential to pay close attention to clinical signs in the medical records, physical examination, and complementary studies.

This study was based on an electronic survey sent to members of two scientific societies involved in the treatment of both pathologies to determine treatment preferences across five clinical scenarios involving concurrent hip and spine disease. The design was modeled after the study by Liu et al.,[11] and reproduced in the Argentine orthopedic population.

Liu et al. received 88 responses, half the number obtained in our study (167). The average years of experience among respondents in Liu's study was 30.8 years, compared to 18 years in ours. Liu et al. reported that the majority of surgeons in both specialties preferred to operate on the hip first in Scenario 2 (hip osteoarthritis and low-grade lumbar spondylolisthesis with radicular pain), and on the spine first in Scenario 5 (hip osteoarthritis and thoracolumbar disc herniation with myelopathy). In Scenario 3, they found statistically significant discrepancies: 19% of spine specialists and 47% of hip specialists chose "hip first."

Similarly, in Scenario 4, 78% of spine specialists and 47% of hip specialists selected "hip first," a statistically significant difference. In Scenario 1, 59% of hip specialists and 49% of spine specialists preferred "hip first." Statistical analysis in that study was conducted using the χ^2 test. However, when we applied the same test, we did not find significant differences; thus, we used the kappa index, which adjusts for random agreement. Using this method, we observed a low concordance index both between and within specialties. For example, in Scenario 1, half of the hip surgeons chose "hip first," while the other half opted for "spine first," indicating no clear consensus even within the same subspecialty.

Analysis of responses across scenarios reveals trends within each specialty. When spinal disease was associated with neurological deficits or spinal cord involvement—such as in Scenarios 3 and 5—both specialties more frequently opted for spine surgery first. There is general agreement that patients with hip osteoarthritis and a progressive neurological deficit should undergo urgent spine surgery. However, the treatment order is less clear when neurological deficits are chronic and non-progressive, as seen in Scenario 1 (narrow lumbar canal with lower limb weakness) and Scenario 2 (chronic lumbar radiculopathy).

In Scenario 1, the tendency of hip surgeons to recommend spine surgery first may be due to unfamiliarity with lumbar disease management and the assumption that any neurologic symptom warrants urgent intervention, regardless of severity. Conversely, spine specialists may favor "hip first" due to the belief that improved hip mobility can enhance lumbopelvic biomechanics, potentially eliminating the need for spine surgery.

In Scenario 4 (hip osteoarthritis with degenerative lumbar scoliosis and sagittal imbalance), both specialties tended to recommend "hip first." This preference may be due in part to the perception that THA is a safer, more reliable procedure with faster recovery and more predictable outcomes compared to adult scoliosis surgery. However, it is important to note that sagittal imbalance poses an increased risk of instability.[12-14]

Regarding prosthesis selection, consistent with Liu et al., hip surgeons tended to select dual-mobility implants in scenarios involving increased concern for instability due to spinal stiffness or spinopelvic imbalance.[12,15] In scenarios with no apparent elevated risk of dislocation, the preferred choice was cementless primary arthroplasty. However, the survey did not inquire about bearing surface types or femoral head sizes, which may influence prosthesis choice.

When either hip or spine symptoms are severe and one of them clearly predominates, determining the order of treatment is relatively straightforward. However, when symptoms are equally severe or when the pathologic or radiologic findings in one region influence the surgical management of the other, decision-making becomes more complex. Preoperative planning would benefit greatly from consensus between hip and spine surgeons regarding optimal treatment sequencing.

Hip surgeons should prioritize accurate component positioning, restoration of hip anatomy, leg length equality, and appropriate soft tissue tensioning. They should also consider the use of large femoral heads or dual-mobility implants in patients at elevated risk of dislocation. In complex cases, we recommend close collaboration between arthroplasty and spine surgeons to formulate individualized treatment plans.

A limitation of this study is the response rate of approximately 20%, which, while relatively low, is comparable to that reported in other published surveys.

CONCLUSIONS

This survey generated considerable interest among participants with extensive experience in hip and spine surgery. Responses were more consistent in scenarios involving disc disease, whereas greater variability was observed in cases with more complex spinal conditions. Given the low level of concordance within each specialty, interdisciplinary discussions between spine and hip surgeons are essential in complex cases. A personalized treatment strategy should be developed for each patient based on individual clinical presentation.

Conflict of interest: The authors declare no conflicts of interest.

S. L. Iglesias ORCID ID: https://orcid.org/0000-0002-1823-0416
F. J. Nally ORCID ID: https://orcid.org/0000-0002-0529-6256
B. L. Allende ORCID ID: https://orcid.org/0000-0003-2757-4381

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