

ChatGPT Provides Satisfactory but Occasionally Inaccurate Answers to Common Patient Hip Arthroscopy Questions

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Disclosures



Yasir AlShehri - None

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Introduction



Artificial intelligence (AI) and machine learning (ML) have gained popularity in the field of hip arthroscopy.

Despite the excitement surrounding AI in hip arthroscopy, there remains a significant gap in the research.

The purpose of this study was to assess the ability of ChatGPT to answer common patient questions regarding hip arthroscopy and to analyze the accuracy and appropriateness of its responses.

We hypothesized that this tool would provide accurate answers to most of the questions it encountered.

Methods and Materials



Common patient questions related to hip arthroscopy were obtained from various well-known frequently asked questions sections of patient education websites of various institutions.

The websites were encountered through a Google search using the search term “common patient hip arthroscopy questions.”

Following that, a total of 19 questions were screened, 10 of which were agreed on by all 3 authors to be included in the study. Each question was prompted into ChatGPT 3.5, the free version of the chatbot, on February 9, 2024. No additional prompts were given, and no limit was set on the response length.

A new session was created for every question to remove any context from a previous question.

Some questions required minor modifications to clarify the context (e.g., changing “when can I drive?” to “when can I drive after hip arthroscopy?”).

Methods and Materials



Response grading system	
A	Correct and sufficient response
B	Correct but insufficient response
C	Response containing correct and incorrect information
D	Incorrect response

Response grading system

Methods and Materials



EXAMPLE:

Question 1: What is hip arthroscopy?

ChatGPT response: Hip arthroscopy is a minimally invasive surgical procedure used to diagnose and treat various hip joint problems. During a hip arthroscopy, a surgeon makes small incisions around the hip joint and inserts a tiny camera, called an arthroscope, into the joint. This camera allows the surgeon to see inside the hip joint and identify any issues, such as tears in the cartilage or labrum, bone spurs, or inflammation.

Once the problem is identified, the surgeon can use small surgical instruments inserted through additional incisions to repair or treat the issue. Common procedures performed during hip arthroscopy include removing damaged tissue, repairing torn cartilage or labrum, removing bone spurs, and addressing conditions like femoroacetabular impingement (FAI) or hip dysplasia.

Hip arthroscopy is typically performed as an outpatient procedure, meaning the patient can usually go home the same day. It offers several advantages over traditional open hip surgery, including smaller incisions, less postoperative pain, faster recovery times, and reduced risk of complications. However, not all hip conditions can be treated with arthroscopy, and the suitability of this procedure depends on the specific diagnosis and individual patient factors.

Methods and Materials



Question 1: What is hip arthroscopy?

Question 2: Who is a candidate for hip arthroscopy?

Question 3: What happens during arthroscopic hip surgery?

Question 4: What does hip arthroscopy treat?

Question 5: What are the advantages of hip arthroscopy?

Question 6: What are the risks or complications of hip arthroscopy?

Question 7: What kind of pain can I expect after hip arthroscopy?

Question 8: When can I drive after hip arthroscopy?

Question 9: When can I go back to work or school after a hip arthroscopy?

Question 10: What are the long-term outcomes of hip arthroscopy?

Results



Question	Response Grade
1. What is hip arthroscopy?	B
2. Who is a candidate for hip arthroscopy?	B
3.What happens during arthroscopic hip surgery?	A
4.What does hip arthroscopy treat?	C
5. What are the advantages of hip arthroscopy?	B
6. What are the risks or complications of hip arthroscopy?	A
7. What kind of pain can I expect after hip arthroscopy?	A
8. When can I drive after hip arthroscopy?	D
9.When can I go back to work or school after a hip arthroscopy?	A
10. What are the long-term outcomes of hip arthroscopy?	A

Questions and response consensus grades.

Advantages of ChatGPT



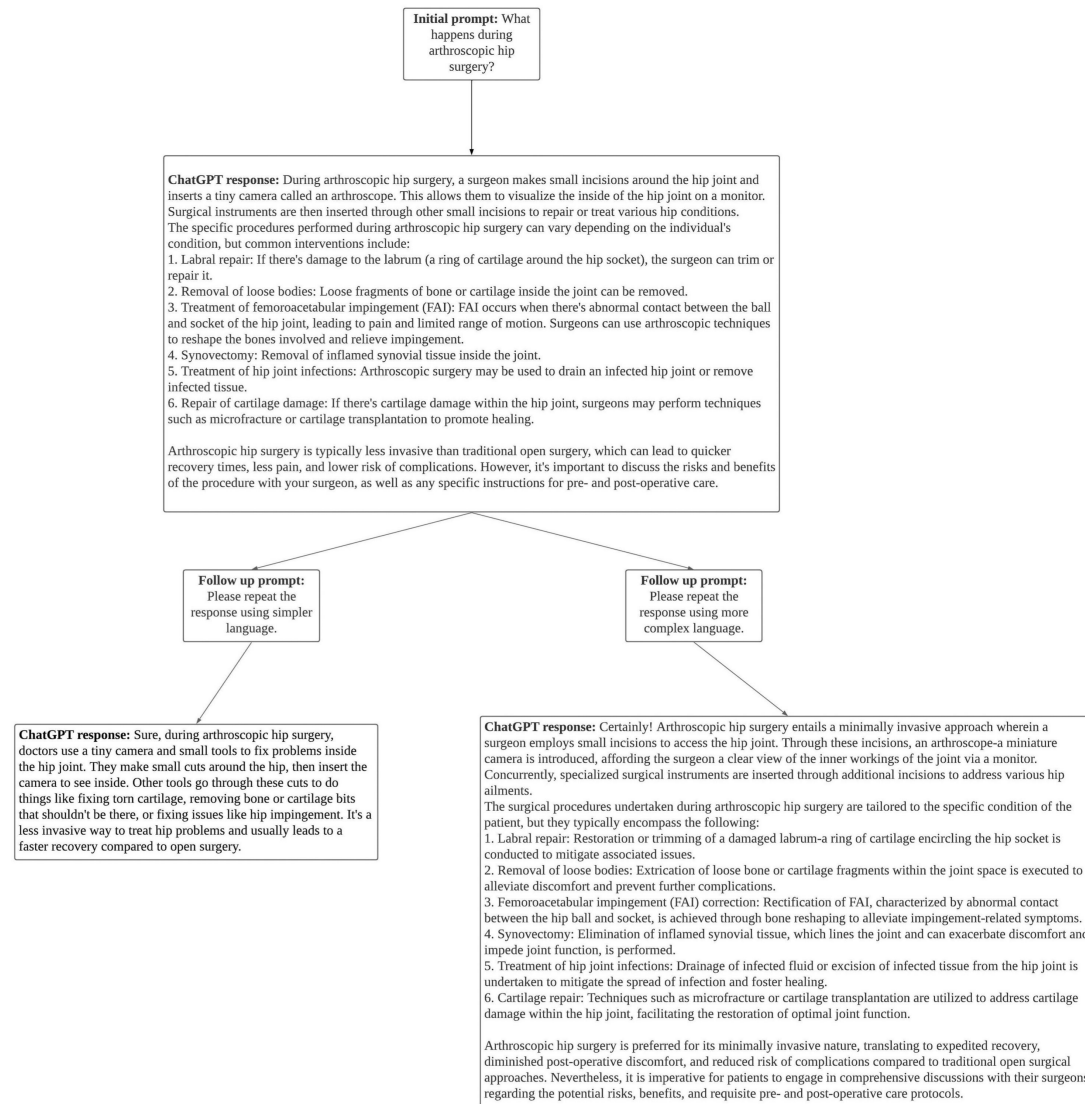
Easily accessible

Can reduce the burden of patients searching multiple websites for their health information.

Uses language that is easily understood and can modify its language complexity if prompted.

Relatively inexpensive

Advantages of ChatGPT



ChatGPT is able to tailor its original response complexity depending on the provided prompt to provide a simpler and shorter response or a more complex and in-depth response. This provides flexibility for patients seeking information that would otherwise not be available in traditional educational resources.

Disadvantages of ChatGPT

Data can lack accuracy as ChatGPT has no way of verifying its sources.

“AI hallucination”, which is the production of incorrect responses with confident and logical explanations to justify them.

Many concerns related to data privacy and bias exist and must be paid special attention.

Conclusions



ChatGPT can answer common patient questions regarding hip arthroscopy with satisfactory accuracy graded by 2 high-volume hip arthroscopists; however, incorrect information was identified in more than one instance.

Caution must be observed when using ChatGPT for patient education related to hip arthroscopy.

The responsible use of ChatGPT depends on knowledge surrounding its limitations and dangers.

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THANK YOU

