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ISM I

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A More Specific Approach to Researching Procedures

Assessment 5 - Research

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Subject: Interventional Radiology

MLA 8 Citations:

Rodrigues, Laëtitia, et al. "Prevention of Pathological Fracture of the Proximal Femur: A Systematic Review of Surgical and Percutaneous Image-Guided Techniques Used in Interventional Oncology." MDPI, Multidisciplinary Digital Publishing Institute, 22 Nov. 2019, www.mdpi.com/1010-660X/55/12/755.

Assessment:

The intention for this assessment was to dive in-depth into a specific interventional oncology (I.O.) topic, as that was the goal set in the last assessment. The topic chosen was pathological hip fractures due to bone metastases in the skeletal system being a relatively unknown field in my knowledge. This article provided a detailed study over the effectiveness of different techniques to treat pathological hip fractures due to bone metastases.

First, the main goal for this assessment was to answer some questions that arose both before and during the reading and analysis of this article and to fill certain lacking areas of knowledge. One of the things that were being looked for in this assessment was terminology to

use when speaking with professionals and for background knowledge in further research. Lots of terminology and definitions were provided in this article, including bone metastasis, osteolytic metastases, Mirel's score, cementoplasty, and others, which provided critical information necessary to understand the article completely. The article went into details of certain definitions, especially in metastasis, which increased my overall understanding of this topic, thus contributing to the completion of the goal of gaining a better understanding of the interventional oncology field. Again, this terminology will be used when speaking with professionals to be better understood when discussing this topic and to appear more knowledgeable about the topic to receive detailed and quality information. Another area of knowledge that was actively being filled while reading this article was the wide range of possible techniques and procedures used to treat this disease. Lots of information was discovered, including the course of action when mapping out a treatment option, such as the first and second options for treatment with certain qualifications. Additionally, since this study researched the effectiveness of a wide array of treatments, it provided a detailed explanation of each one. For example, it explained how cementoplasty is useful for pain reduction, but is not effective in preventing secondary fractures, and how techniques such as use of screws, nails, and needles in combination with bone cement were being explored as well. Furthermore, it listed the fracture rate reductions with each of the treatments being used as well as how promising each treatment was. This information can be used to apply to the original work project, although this topic will be discussed more in-depth later. Additionally, this information can provide useful information to brainstorm more questions to ask professionals in informational interviews specific to this topic as well as to consider when conducting further research on this topic. The last inquiry about this topic that I had was about what trends in the interventional oncology field exist and how they will affect my future career

as an interventional radiologist. The trends were promising. For example, more medical devices are being introduced into this field to treat the pathological hip fracture due to bone metastases, and more importantly, this study concluded that minimally invasive procedures are among the most effective treatments for this disease, as they treat pain and prevent future fractures. This is exciting news because interventional radiologists specialize in minimally invasive procedures, so as an interventional radiologist in the future, assuming this conclusion is correct, I will be able to perform many procedures treating this disease. Reading about this specific disease and interventional oncology in general was very exciting, so a trend that says interventional radiologists will be working in these fields more is very promising.

Second, another goal for this assessment was to think about how this article affects my overall understanding of interventional radiology. To start off, this article adds an extremely large amount of useful information to my bank of knowledge and opens up many doors and possibilities to future research in this field. This provided more ideas for the original work project and created additional ideas for future research and potential interview questions. Additionally, connections between prior knowledge and the information consumed today were successfully made. There were frequent mentions of ensuring that there was minimal pain felt by the patients and that all pain was relieved after these procedures. Additionally, the study focused on treatments that would relieve pain and put emphasis on these treatments in particular. Last spring, I worked on a research editorial going into the corrupt pharmaceutical companies behind the opioid crisis and learned that patient satisfaction surveys—created by Press Ganey and used to determine the performance of the doctor and thus determine their compensation—contribute to the opioid crisis because doctors over-prescribe pain relief medication, such as OxyContin, to satisfy the patients by relieving pain. Going back to the article, the focus on pain relief made me

think about a possible connection between the patient satisfaction surveys and this focus on pain relief. This could just be a coincidence, however patient satisfaction surveys are a large part of the medical world and hospital administration, so there must be some connection between this stress on minimizing pain and the widespread use of patient satisfaction surveys to determine the quality of the physicians. To reflect on this information, the more I read about interventional oncology and its procedures, the more excitement I feel to be going down this career path. This certainly appears to be the right career choice for me, which is an exciting feeling. It was surprising that there are so many options for treatment for this disease and that this study was able to successfully determine which ones were most effective. This can be beneficial by making further research more efficient due to the new knowledge of what procedures to focus on developing the original project for.

Speaking of the original work project, a major focus of this research assessment was finding uses for the original work project, which is to create a placeholder arm in the operating room that can assist interventional radiologists in procedures by adding an extra hand, in the operating room. This article went in-depth into the specifics of the procedures used to treat the pathological hip fracture due to bone metastases, including the use of screws and nails in combination with bone cement, minimally invasive procedures, etc. This information about the details of the procedures provided a base off which the original project-specific research, such as the specific incisions and process of the procedures, can be conducted. Now that the information on the procedures have been gathered, additional research can be done on the specific operating room processes. This article was extremely beneficial for contributing to the original work project and future research, acting as very detailed 'starting-point' information.

Lastly, while analyzing this article, an additional goal was to develop ideas for further research. This goal was successfully completed, as many ideas for further research were created. Further research can go into specific minimally invasive procedures used to treat bone metastases in the femur and hip to treat fractures into those areas in order to develop ideas for the original work project. Additionally, future research can go into the specifics of the cementoplasty of bone metastases procedure, which is another procedure to potentially base the original work off of.

In conclusion, all of the goals were answered and this article was extremely useful and provided critical, detailed information. This article provided ideas for the original work project as well as ideas for future research. Overall, this research assessment was a success.

Notes:

[Prevention of Pathological Fracture of the Proximal Femur: A Systematic Review of Surgical and Percutaneous Image-Guided Techniques Used in Interventional Oncology](#)