

Interview

Collaboration across departments maximizes operational efficiency in the hybrid operating room

Dr. Tsutomu Shichino, MD,
Chief of Anesthesiology Department,
Kyoto Medical Center, Fushimi, Kyoto, Japan



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About National Hospital Organization Kyoto Medical Center

Kyoto Medical Center, located in Fushimi, Kyoto, is committed to advancing regional medical treatment. Despite numerous challenges, the hospital successfully implemented a hybrid operating room in December 2021. This innovative facility enables collaborative procedures across various departments with the aid of advanced imaging technology, resulting in increased utilization rates. In this interview, we had the opportunity to speak to Dr. Tsutomu Shichino, MD, Chief of Surgery Management in the Anesthesiology Department, about the concept and operation of their hybrid operating room.

Location:

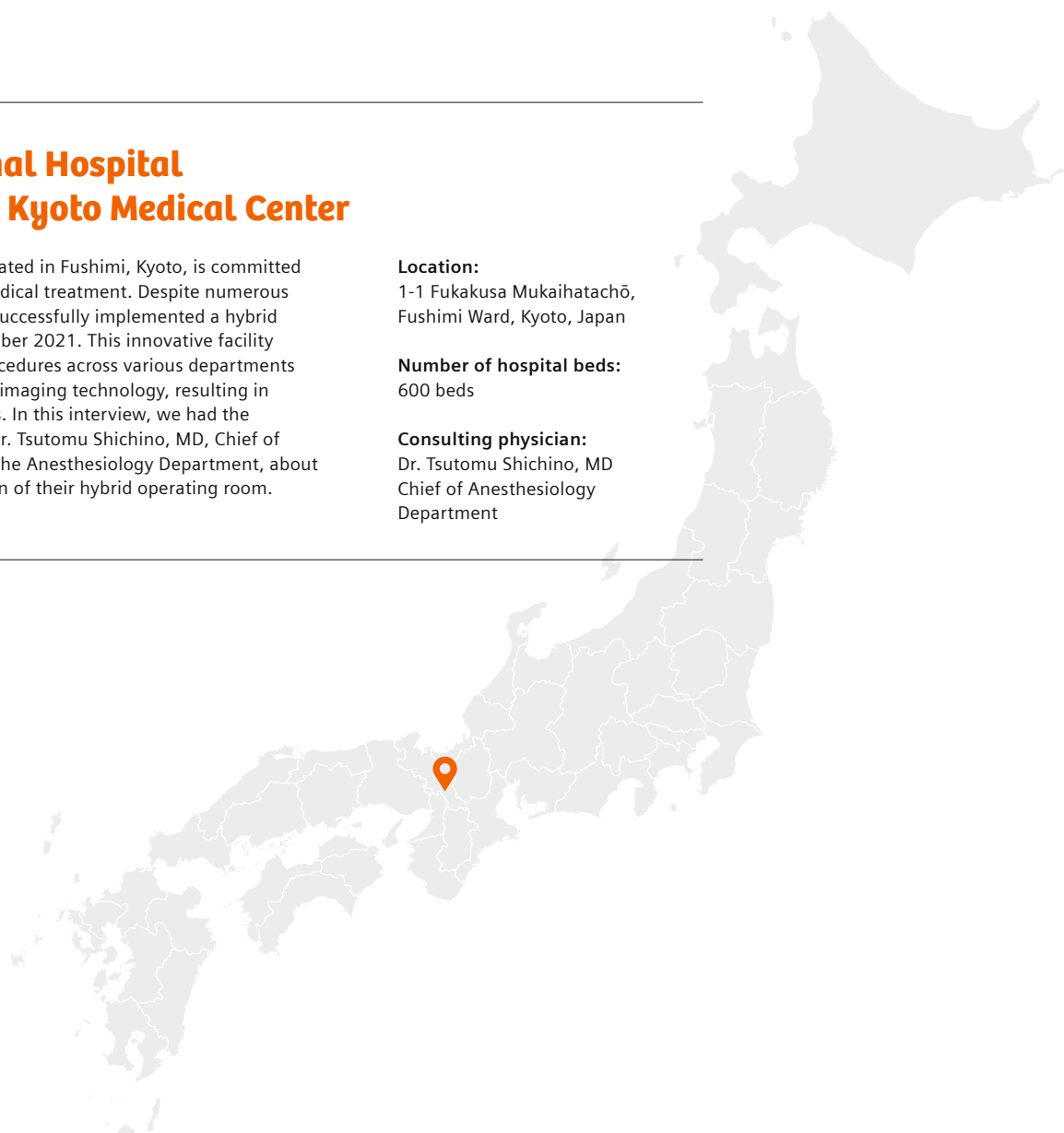
1-1 Fukakusa Mukaihatachō,
Fushimi Ward, Kyoto, Japan

Number of hospital beds:

600 beds

Consulting physician:

Dr. Tsutomu Shichino, MD
Chief of Anesthesiology
Department





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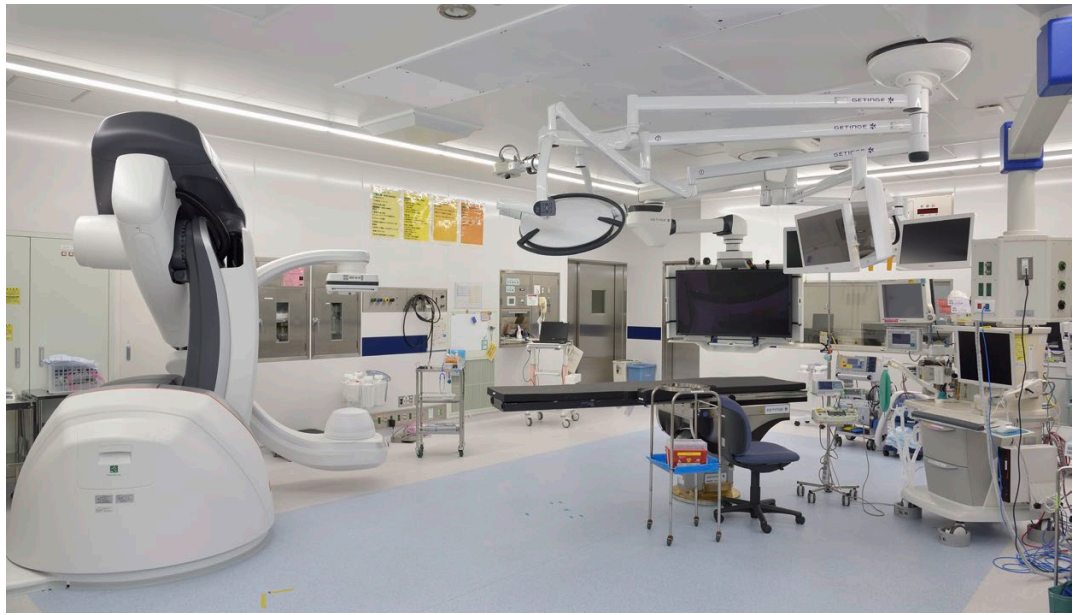
Could you tell us about the anesthesiology department?

When I first started my duties at Kyoto Medical Center, I was the only anesthesiologist. As we also have an emergency medical center, emergency cases are frequently brought here. We don't refuse cases just because it would be convenient for the anesthesiology department but instead, accept them whenever possible. I believe this to be the cornerstone of supporting regional healthcare and contributing to the management of the center.

However, the reality is that there are limitations to what a single anesthesiologist can do. Therefore, we first focused on recruiting and increasing the number of anesthesiologists. This reflects recent trends in changing working conditions and, if undertaken, will lead to a reduction in the workload per anesthesiologist. Now there are 12 members of staff in the anesthesiology department.

What are some of the features of your operating room operations?

Ensuring the efficient use of the operating room, regardless of the type of surgery, is our primary focus. In our center, all operating rooms are designed to accommodate any type of surgery. Additionally, one notable feature of our design is the inclusion of elevators within the operating rooms, directly connected to the emergency medical center. This design takes patient flow into consideration, allowing for the direct transfer of patients from the intensive care unit of the emergency medical center to the operating room via elevator, without the need to cross corridors between wards. This is something we take pride in as designers.



Hybrid operating room with ARTIS pheno

Please tell us how the hybrid operating room was introduced.

Beyond TAVI as an advanced treatment, through further study, we discovered that hybrid operating rooms are suitable for a wide range of surgical procedures, spanning various medical specialties such as orthopedics and neurosurgery.

Recognizing the broad applicability, I strongly advocated for the installation of such a facility in our center, believing it would be easier to persuade the National Hospital Organization and the management team. While the management team generally approved the installation of the hybrid operating room, conditions were imposed. Construction had to take place within the existing space of the operating rooms without reducing the number of surgeries. As hybrid operating rooms require ample space to accommodate various items of equipment, including vascular imaging devices, considerations regarding relative positioning with other operating rooms arose.

Furthermore, logistical challenges such as how to transport equipment while surgeries were being conducted in adjacent rooms added to the complexity. However, with cooperation from various parties, we completed the project.

Please describe the concept and operation of your hospital's hybrid operating room.

To use the hybrid operating room solely for TAVI procedures would not significantly increase its utilization rate. Therefore, the concept of our center's hybrid operating room evolved to make it available for multiple medical specialties.

Fortunately, there were requests from orthopedic surgeons to use the hybrid operating room for spinal surgeries, and it turned out that they were more eager to use it than any other department. Similar requests came from neurosurgery as well. With multiple departments expressing interest, it became necessary to devise a scheduling method that avoided conflicts. Consequently, we divided

the usage days of the hybrid operating room into odd and even weeks, further allocating time slots based on specific days to accommodate the preferences of each specialty.

For example, orthopedic surgeries are scheduled for Mondays, while cardiovascular surgeries and orthopedic surgeries alternate on Tuesdays. Similarly, neurosurgeries and cardiac surgeries (for stent graft insertion) alternate on Wednesdays. Thursdays and Fridays are left open for procedures such as pacemaker implantation by the cardiology department or bypass surgery for peripheral arterial occlusive disease by the vascular surgery department, which both require imaging. Initially, we had considered allocating the room for general surgeries if it remained unused, but it is currently operating at full capacity.

What are your thoughts on the imaging system ARTIS pheno?

As an anesthesiologist, I'm not in a position to evaluate the functionality of vascular imaging devices. However, even to the untrained eye, it's evident that the images are completely different and much clearer from those obtained previously and, due to the size of

the system, I am mindful of risk management when administering anesthesia. For instance, I take care to avoid collisions that could lead to IV leaks and ensure that the endotracheal tube remains securely in place. I also try to be very careful when changing my position and moving around and pay close attention to patient positioning.

What are your thoughts on the future of hybrid operating rooms?

As an anesthesiologist, my opinion is based on managing surgeries or the operating room. However, I believe that in anticipation of an increase in future frequency of use, it'll be necessary to ensure efficient operating procedures. Even though the hybrid operating room can be used for regular surgeries, it would be a waste if it were solely used for that purpose. The key question is how to maximize the utilization of the hybrid operating room and increase the number of surgeries. In our center, multiple medical specialties compete for its use, so there is no concern. However, generally speaking, I see this as a future challenge for administrators.

(Interviewed conducted on June 8, 2022)

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