Ramón y Cajal hospital opens a new grossing room.

Interview with Dr. José Palacios

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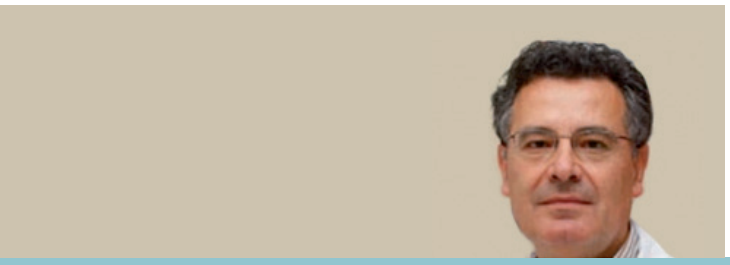

Introduction

Dr. José Palacios Calvo
Head of Pathology
Ramón y Cajal University Hospital

In June 2016, Ramón y Cajal Hospital opened a new grossing room in the Pathology Department, an initiative born out of the need to update the available equipment and refurbish the spaces and workstations used by pathologists and technicians in order to meet the current formalin safety standard.

A few weeks after the first anniversary of the opening, we decided to ask the Department staff their thoughts about the new facilities. To this end, we enlisted the help of Dr. José Palacios, Head of Pathology, who gave us the opportunity to hear in first-hand his impressions in a brief interview.

Dr. Palacios, your laboratory has undergone some significant changes in recent months. A grossing room redesigned from top to bottom, new equipment... Anyone remembering what it was like only a short while ago would be amazed. Could you tell us more the changes that were made?

Yes of course. To start, we moved the equipment around and increased the square meterage of available space. We also updated the grossing stations by adding new equipment for macroscopic dissection (eGROSS) and grossing of biopsy specimens (WorkSTATION). The room was also fitted with a centralised vapour extraction system to which the fume hoods of the grossing stations are directly connected. We basically replaced and relocated nearly all the equipment.

What prompted you to carry out this radical renovation?

The refurbishment plan essentially came about for two reasons. Firstly, to overhaul technological equipment and infrastructures which were in clear need of improvement, especially in the grossing area, which allowed us to reorganise the workspace and modernise existing equipment. Secondly, we also needed to make sure that the facilities complied with the new regulations regarding formalin exposure, which prompted us to take action in order to improve the working conditions of our laboratory staff.

In any case, while the changes are very apparent, they probably involved less obvious ones, in terms of organisation or optimisation perhaps...

We had made previous adjustments to the work, by hiring technicians for the grossing room, mainly for processing endoscopic or skin biopsy specimens. The new layout, which includes special WorkSTATION biopsy tables, is the keystone of the reorganisation of the work, as the new equipment is optimally suited to what we do here.

When you talk about updating the equipment in your lab, are you referring exclusively to grossing stations?

That was the first step, but the project aimed to cover the entire workflow from the collection of the samples to their receipt in the lab, dissection and tissue processing. The first phase of the refurbishment focused on the grossing room, which was the most urgent part, but in a

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short while, we'll also discuss vacuum fume extractors and automatic formalin dispensing systems (SealSAFE) which reduce the use of and exposure to formalin, not only in the lab, but also in operating theatres in order to control formalin exposure when handling surgical tissue specimens and improve the documentation of these specimens with the date and time of collection, patient number, etc. The work was completed with the purchase of state-of-the-art tissue processors which, apart from other technical characteristics such as rapid tissue processing, allow to forgo the use of toxic solvents such as xylol and minimise formalin exposure.

The way formalin is managed in the laboratory is worth a mention, in particular the special formalin drain to which the stations are connected.

Yes, we installed a system to deal with the formalin waste generated at the workstations that allows to eliminate handling and exposure almost completely. The refurbishments included the creation of a network of pipes under the floor which drains away hazardous liquid waste like formalin directly from the workstations to an internal circuit that channels it to large tanks located on level -5. That way, there is no need for the staff to collect or handle formalin, which reduces exposure. We took advantage of a pre-existing infrastructure, pipes which were already in place for the collection of liquid waste from the development of X-ray plates.

How do you manage the images generated by the different workstations?

At the moment, imaging is done at the actual workstations, which have built-in cameras. This is also where we document cases, take measurements and mark out areas for dissection, so the logical next step would be to include the images in the report, which is where they would be most useful. This is something that we're working on right now.

So you are hoping to get images integrated the report in the near future...

Yes, we hope to be able to do that soon. When an image is not integrated in a report, experience tells us that it is looked at less, so to a certain extent, even the best quality images can go to waste simply because they aren't readily available to look at. The eGROSS stations allow direct imaging of the specimens, which is an important tool and a vast improvement upon merely describing the specimen. If the image is stored in a separate system, it gets less use, no doubt.

Are there any particular applications that you would highlight in which the use of high-quality images has improved the quality of the physician's work?

I would single out work involving complex specimens requiring very precise tissue mapping and dissection. Mapping without images or using low-quality images is a far cry from what we are able to do now. One example would be bone tissue or mastectomy specimens after neoadjuvant chemotherapy, which require detailed mapping of various areas and can benefit from this imaging system. Generally speaking, as logic would have it, the more complex the specimen, the more important the management of imaging...Indeed, when the specimen description is bulky, a high-quality image with well-marked lines of dissection makes it easier to do the job and to document where each specimen comes from.

What characteristics of the new grossing stations would you highlight from a user's point of view?

Certainly the impression I get from the staff is that it gives them a less rigid framework to work with, more flexibility, without the restriction of an essentially closed physical space. It is more comfortable to use, not only due to the up-and-down table height, but in terms of accessibility and the ability to get visually close to the specimen. There's also the convenience of being able to obtain images and markings at the same stage of handling and grossing without the specimens ever having to leave the workstation... Anyway, I think it might be best if those who carry out these tasks on a daily basis tell you what they think directly.

AN. - I would personally highlight the work environment, which is much cleaner now. It has been a major improvement not to experience any exposure to formalin, even with digestive specimens which also tend to give off unpleasant odours. And then obviously the ergonomics, being able to handle the entire grossing process from the most comfortable position, being able to wash specimens, to add or remove formalin and to perform every step in one place. I feel that the quality of the work has improved as a result.

HP. - Well certainly we now have the flexibility to decide whether to prepare specimens standing up or sitting down, by adjusting the table height... the table is perfect in that regard. All we need now is to get new chairs, as our current ones look a little outdated at this point! Also, the fact that the stations don't have a front panel allows us to work with specimens that require extra precision, to get close without anything getting in the

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way. This is especially obvious when working with CNS specimens.

CP. - In terms of fume extraction, it's amazing, and the lighting is good, especially on the table, when working with large specimens. Then there's the mobility aspect: the option to adjust the table height is ideal, in my opinion.

MG. - The change has definitely been for the better, especially in terms of being able to adjust the table height, which allows you to work standing up if necessary. This is especially useful when working with large specimens. Both the big and the small table get plenty of light. For biopsies, we've noticed quite a change because the angle of the light is different than before, but it's probably just a question of habit. In truth, I have nothing but positive things to say about it. The only thing that's missing is a waste disposal unit in the sink, it doesn't come with one, so it would have to be added.

This accessory that doesn't come as standard, because not everyone asks for it, but it can be included. Do you think that this new tool also affects quality or the way you work?

MG. - For me, one of the major differences is being able to dispense formalin directly into the specimen jars at the touch of a pedal, without having to add or transfer anything manually. That way, there's no need for handling, no smell and it's much safer. In the past, you had to get up from the tables to fill up the jars with formalin and then return to the workstation, but you can do it all in one place now. As for formalin fumes, we've noticed a huge improvement I must say.

CP. - The layout of the workstations is great, especially the large tables (eGROSS), the water sink, the formalin sink, accessibility in general, it's really well done.

HP. - Yes, of course it's different. When using these new workstations, you notice that you don't get any formalin fumes, so it's much safer to use. It makes a tremendous difference compared to our previous working conditions, where we were much more exposed to formalin fumes even though there were two hoods, but they did not have the necessary suction power.

What do you think about the built-in imaging system?

HP. - It's made a tremendous difference compared to the imaging methods we had before and it's vastly improved the quality of the work. When working with thyroid or CNS specimens, which is what I specialise in, a camera is mandatory. The zoom function is great and for instance

lets you visualise all the details of the peripheral nerves, which are tiny.

AN. - Being able to take pictures in real time while dissecting the specimens really improves the quality of the macroscopic examination and makes it much easier to review cases because everything is logged and documented, including the exact part the tissue section was taken from, so that if the specimen needs to be reworked, we know exactly how it was cut originally.

CP. - Great, of course. Although we'll only really use it to its full potential when the entire macro imaging system is integrated into the report.

MG. - The integrated camera allows excellent visualisation of the specimens, whether directly or with the methacrylate screen extended, although that's more relevant to pathologists.

You mean the retractable clear horizontal screen which protects the user from splatter and therefore provides biological protection; do you find those splatter guards useful?

MG. - Yes, we use it quite a lot and it gives us security, especially in terms of protecting the eyes when working with infected samples, even when leaning over the sample, which isn't something we need to do all that often now that we're able to move the table up and down, as we can set it to the best working position.

AN. - These are useful when working with specimens with a high risk of infection like hepatitis as they provide a safeguard against splatter, but you don't really need them for normal specimens, in which case you can leave it hidden from sight as it is retractable.

What kind of specimens do you handle, and how do you organise the work?

MG. - The pathologist handles large specimens and technicians work with endoscopic specimens and certain special ones. I work with endoscopic specimens and skin samples, that's what I specialise in. To an extent, we took advantage of the reorganisation to redistribute the work of the staff. There's over twenty of us technicians using the new system.

What about noise levels with the new grossing stations?

CP. - We don't usually set the extraction to full power, because we don't really need to in order to keep the environment clean, so the noise level is perfectly acceptable.

HP. - The noise level is very acceptable, no issues there.

AN. - Obviously there's some background noise, but it doesn't bother us, you get used to it after a while, and it obviously depends on the chosen extraction setting.

Regarding the new facilities, can you think of any aspects with room for improvement?

HP. - The only think that comes to mind is the lighting: we've noticed a change in that we've gone from having a lot of natural light with extra fluorescent lighting to a room with no windows to the outside light and which mostly relies on the light generated by the workstation itself. It can make a difference with the specimens that I dissect, i.e. thyroid tissue samples, which require a great deal of precision. We don't get quite as much light in the grossing room as we used to. We could benefit from adding an extra lamp to get more light, which would be helpful for very detailed work.

CP. - Although the WorkSTATION tables are really designed for endoscopy, I would still prefer a little more space in the work area, and a dedicated area for instruments. I've also noticed that the layout seems better suited for people who are left-handed as opposed to right-handed. For once, left-handed people are at an advantage.

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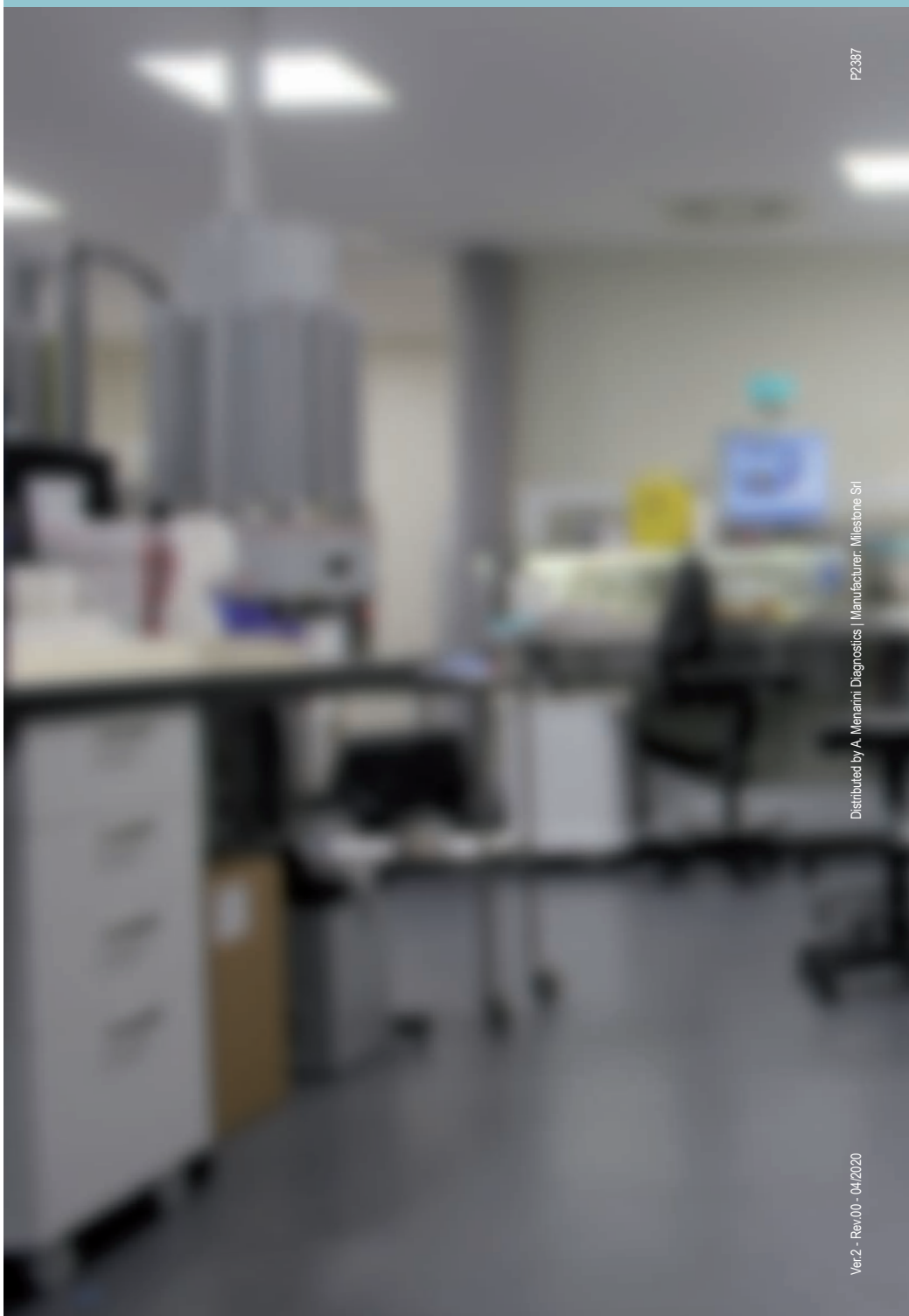
Héctor Pian Arias. Pathologist.
Maribel García. Laboratory Technician.
Antonia Navarro. Pathologist.
Cristian Perna. Associate Pathologist. Head of Department.



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