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Breast Pathology.

Supervisor: Professor Dr. Anna Sapino.

May and June 2019



I started my training at Candiolo Cancer Institute (IRCCS) from beginning of May, 2019 and completed at the end of June. It was a two months training in the field of Breast Pathology under the guidance of Professor Anna Sapino and under supervision of Professor Caterina Marchio .

Candiolo Cancer Institute is a referral cancer centre with huge number of patients from Piedmont region and lot of referrals and consultations from all the other parts of Italy. On the first day when I arrived at hospital, I was introduced to the all the staffs of pathology department who welcomed me with warm hearts and helped me throughout my two months stay.

I have to acknowledge that I was exposed to diverse activities, spanning from standard histopathology and cytopathology to molecular pathology and multidisciplinary meetings. Each day I took part in various teaching and learning activities. The basic of pathology starts with grossing techniques or macroscopic observations. I attended the grossing laboratory, followed routine procedures, frozen sections and standard grossing techniques of breast cancer specimens. Taking macroscopic images was also crucial part of grossing protocol. Another new thing that I came across was the use of macro blocks and macro slides for breast lesions. It gave an opportunity to explore a whole spectrum of lesions of breast from benign to *in situ* to malignant and transformation zone in a single slide.

I also attended the rapid on site evaluation cytology in the radiology suite for image detected mammary gland lesions and lesions of other origin. Using rapid staining technique it was easy to know about the adequacy of the sample and also give diagnostic opinions. These FNAC samples were also processed for preparation of cell blocks. I was involved in histopathology review of all the routine cases of breast lesions that undergo pre-operative core biopsy or vacuum assisted biopsies. Core biopsy and vacuum assisted biopsy of breast cancer both were new procedures to learn.

Every day I used to see a lot of cases, take part in the sign out sessions with Professor Anna Sapino, Professor Caterina Marchio and my fellow residents with an active discussion on the rational use of immunohistochemical markers and their interpretations and possible need to require additional molecular tests to reach the final diagnosis or to better stratify the prognosis of patients. During review

of second opinion cases, I got chance to discuss several unique lesions, always posing a challenging scenario of differential diagnosis. Professor Marchio always helped me with all the breast pathology guidelines, AJCC classifications and new articles on breast pathology. As the hospital was a referral centre and professor Sapino being the one of the renowned Breast Pathologist, we had a lot of consultation cases, interesting and challenging cases. It was a wonderful experience to see a lot of cases which I had read or saw only in books. A lot of research work is going at Candiolo; working with the PhD students and post doctoral reach fellows gave me lot of idea on recent advances and molecular techniques. I followed the molecular lab's daily work to learn about use of FISH technique in equivocal cases of HER-2 positivity and how to work with the software and interpretation. Getting to know about different cell lines and tissue micro array was also worth of mentioning. I used to take part in various CME and seminars in the hospital. There were talk programs by national and international speakers. I was also fortunate to have access to journals, research articles and books to know more about breast cancer.

Professor Sapino is an expert in Breast Pathology, the director of pathology at IRCCS, scientific director of the hospital. She has more than hundred publications on her credit, is a contributor to the book WHO classification of tumors of breast, a great teacher, passionate pathologist and a caring human being. I was so fortunate to work with her.

Lastly, I would like to express my heartfelt gratitude to the "World Pathology Foundation" for awarding me with this support and giving me an opportunity to go and learn in the field of my interest. My experience will guide me in the work I do for my patients, present and in future.

Greta started the training at the beginning of May and completed it at the end of June. She worked under my supervision and the supervision and collaboration provided by Prof. Caterina Marchiò, with an activity mainly focused on breast pathology, for which we are referral centre in Piedmont Region and in Italy, as documented by the large number of consultation cases we receive for second opinion. We have to acknowledge that the activity Greta was exposed to has been very diverse, spanning from standard histopathology and cytopathology to molecular pathology and multidisciplinary meetings with clinicians. She also interacted with students and residents in Pathology. She attended the grossing laboratory many times, for frozen sections and standard grossing of breast cancer specimens and she liaised with the laboratory technicians also with regards to the technical part (e.g. the use of the under vacuum machine for tissue preservation and fixation; the use of Macropath to take representative pictures of specimens; the use of macro-blocks and macro-slides for accurately sampling breast lesions). She also attended the rapid on site evaluation cytology in the radiology suite for imaging-detected mammary gland lesions and lesions of other origin and she overshadowed the technicians in the preparation of smears and cell blocks for final diagnosis. Each day she was very much involved in histopathology review of all of the routine cases for breast pathology (pre-surgical core biopsies and vacuum-assisted biopsies as well as surgical specimens), with an active discussion on the rational use of immunohistochemical markers and their interpretations and the possible need to require additional molecular tests to reach the final diagnosis or to better stratify the prognosis of patients. During the review of second opinion cases she got the chance to discuss with me several unique lesions, always posing a challenging scenario of differential diagnoses.

Finally she had the opportunity to visit the lab of Cytogenetics and Molecular Pathology to appreciate several molecular techniques that are now complimentary to standard histopathology to be more precise in the definition of the biology of breast carcinomas. All of the members of my laboratory found Greta a delightful person to work with. I strongly believe she is really committed to her work and passionate about learning, which is a key feature to achieve a high expertise position in her field. With this experience she is also creating a good network of professional connections that may be instrumental for her in the future and which anybody around her will benefit from. She is also characterized by a positive attitude, which has been key in the past two months to enjoy the time spent with her at the microscope and in the lab and that has rapidly made Greta part of my team since the very beginning, regardless of the short period of her visit. Should you have any further queries please do not hesitate to contact me.