

AB044. PS02.08: Surgery for TET in the era of translational research: towards a workflow model incorporating the biobank

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Background: In recent years the role of surgery for thymic epithelial tumors (TET) has become multi-faceted. In a rapidly evolving scenario such that of modern oncology, availability of quality tissue samples has become of paramount importance for research. Tumor banks are involved in the identification of significant genetic, molecular and environmental biomarkers; blood constitutes a source of matched normal counterpart and serum/plasma provide further derivatives essential to research. In addition to frozen tissues and blood/serum derivatives, an archival (paraffin-embedded) tissue biobank allows retrospective analyses. Standard operating procedures, dedicated infrastructures and software are among the requisites for optimal biobanking in the era of precision medicine. Surgery departments are expected to build workflow models including Biobanks as a pivotal element in the management of patients with rare tumors such as TET. As a Thoracic Surgery Unit, in recent years we have been collaborating with our Biobank (BBIRE) including TET as a major focus of research interest, incorporating dedicated procedures in our clinical practice and helping BBIRE providing high quality samples to in-house, national and international research projects. A continuous collaboration and sharing of well-annotated cases

has also been established with the Referral Center for Rare Tumors of the Campania Region for new and archival tissue cases. Basing now on the renovated institutional support, our aim is to implement the biobanking workflow.

Methods: Implementation of our workflow models, shared with the institutional Biobank, is ongoing by improving infrastructure setting, sample traceability, quality controls refining and ethical committee involvement.

Results: Whenever a possible TET is suspected, a specific informed consent is proposed to the patient. Upon acceptance, a telematic request for banking of biological fluids (whole blood, EDTA-treated plasma, citrate-treated plasma, serum) is addressed through the Local Area Network (LAN) to the Clinical Pathology Lab. Surgery nurses (research nurses) collect the appropriate samples and send them to the Biological Liquid-Biobank BBIRE-LB prior to surgery. Robot- or Video-Assisted Thoracoscopic surgery, “open” surgery as well as bioptic approaches are then performed for anterior mediastinal masses according to decisions concerted by the Disease Management Team (DMT). The sterile tissue specimen is immediately addressed to the Pathology Department. A specialized pathologist decides the number and typology of tissue specimens to be made available for the Tissue Biobank (BBIRE-T) and searches for peritumoral thymus in the available mediastinal tissue. Morphological controls are performed. Twenty cases have been collected in two years. With the new extended protocol in the last year further progresses have been realized.

Conclusions: This multidisciplinary procedure derives from a shared increasing interest in TET. As Thoracic Surgery we are setting the stage for future contribution to molecular studies and for support of national and international clinical studies.

Keywords: Biobank; thymic epithelial tumors (TET); surgery; thymoma; thymic carcinoma

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