#355 FEASIBILITY OF NEW ZEALAND RABBIT AS AN ANIMAL MODEL FOR THE STUDY OF BIOLOGICAL GRAFTS IN PELVIC RECONSTRUCTIVE SURGERY


**Introduction:**
Sant Pau Hospital performs a project that aims to study the biological properties of a human acellular dermal matrix (hADM), which can be an alternative to synthetic meshes.

**Objective:**
To evaluate the New Zealand (NZ) rabbit as an animal model for testing a hADM as a biomaterial to be used in pelvic reconstructive surgery.

**Material and methods:**
Experimental study on animal model, using white female NZ rabbits. The graft will be implanted at the subcutaneous level of the abdominal wall and in the rectovaginal septum of each animal. As a control, a synthetic polypropylene (PP) graft will be used. 20 rabbits will be randomized in 2 groups. Experimental group: hADM graft, control group: PP graft.

**Results**

1. **Surgical difficulties**
   - Adequate **exposure** of the vaginal surgical field
   - Maintenance of the integrity of the **vaginal mucosa layer** during the placement of the grafts
   - Maintenance of adequate **aseptic conditions**
   - Location and dissection of the **lateral thoracic vein** during abdominal surgery

2. **Clinical complications during follow-up**
   - **Control group:**
     - 20% minor injuries due to stereotypes
     - 10% dirty genitalia
     - 20% extrusion of the abdominal mesh
     - 10% nose injury due to collar malposition
     - 10% abdominal wound infection
     - Death day 58 (normal autopsy)
   - **Experimental group:**
     - 20% minor injuries due to stereotypes
     - 30% dirty genitalia

3. **Pathological findings during explantation surgery**
   - **Control group:**
     - 30% erosion of the vaginal mesh
     - 10% abdominal and vaginal chronic infection
   - **Experimental group:**
     - 40% vaginal hADM not visible
     - 10% abdominal and vaginal chronic infection

There was a greater number of pathological findings during the explantation surgery in the **control group** (60%) vs the experimental group (10%) with a p = 0.015. However, the macroscopic degradation of the vaginal grafts was more frequent in the **experimental group** (40%), whereas in the control group the vaginal mesh was identified in 100% of the individuals (p = 0.01).

**Conclusions:**
It is feasible to use New Zealand rabbits as an animal model to reproduce surgeries both abdominally and vaginally to test grafts. Although this model comes with some difficulties related to the small size of the animal, it is compensated by the benefits of the model: it is an easily acquired animal, which offers the researcher a quick learning curve regarding its management and caring, and presents a cost-efficient barning.