

Background

- Ashermans Syndrome (AS) is the responsible aetiology in 5% of infertile women. Some women with AS have complete absence of functional endometrium developing absolute uterine factor infertility (AUI).
- Endometrial transplantation (ETx) may present a valuable treatment option in this cohort.
- Previously, our team has demonstrated the feasibility of autologous ETx but a livebirth was not achieved.
- The addition of platelet rich plasma (PRP) was proposed for its ability to harness the intrinsic regenerative capacity of the endometrium as proven in both in vivo and ex vivo models.

Objective:

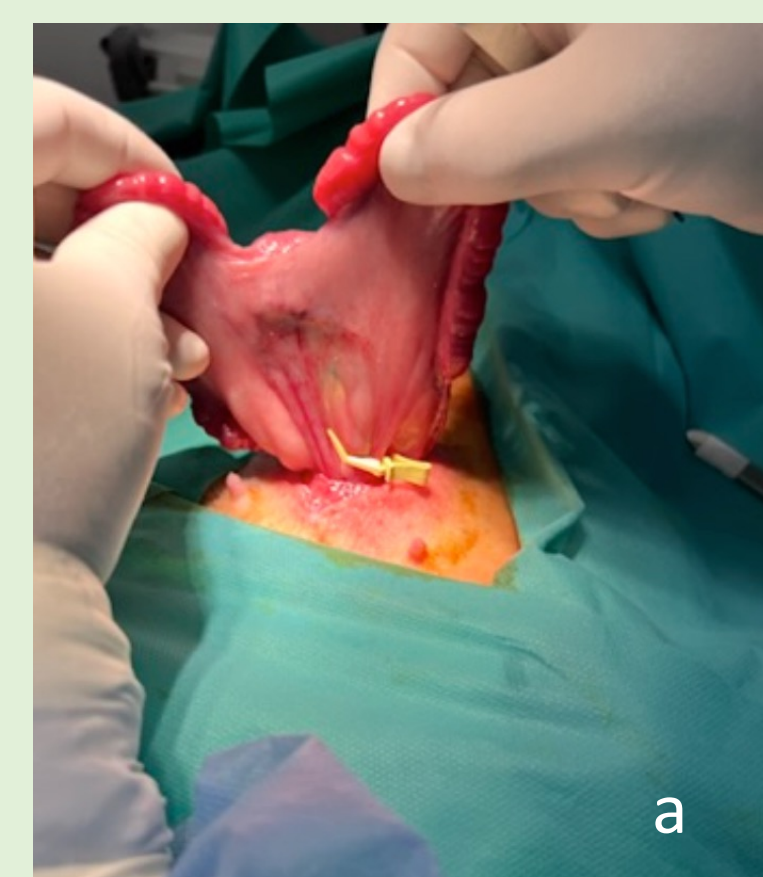
- To investigate the role of PRP in neovascularisation at the endometrial-myometrial interface and to compare the effect of PRP treated rabbits with a control group undergoing ETx with no additive therapy.

Design

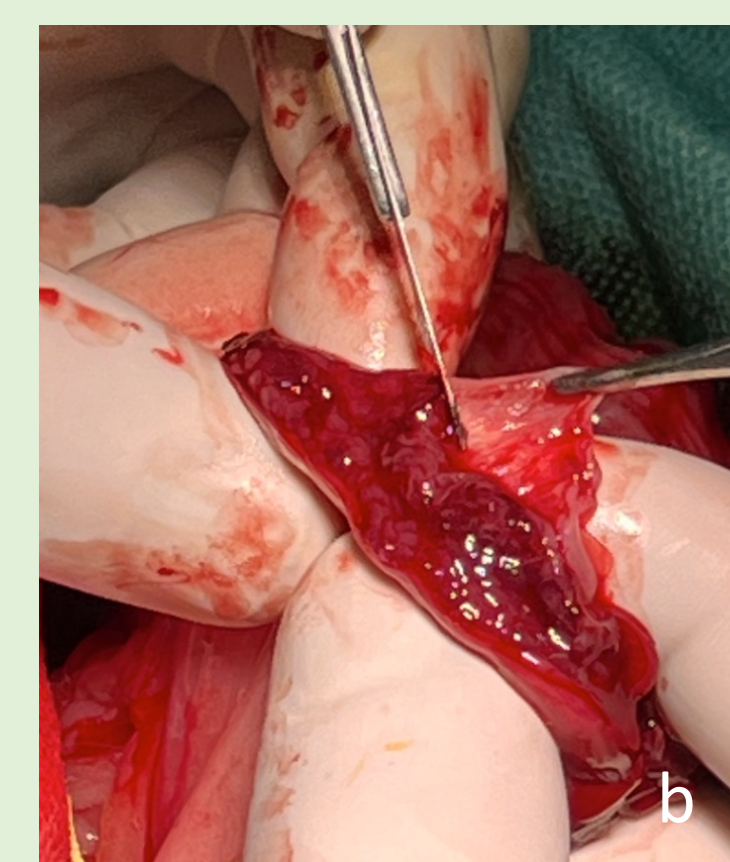
- Autologous PRP was prepared using the Endoret®(prgf®) technology (BTI System IV/V; BTI Biotechnology Institute, Vitoria, Spain). Six New Zealand Rabbits underwent ETx in one of the

Methods

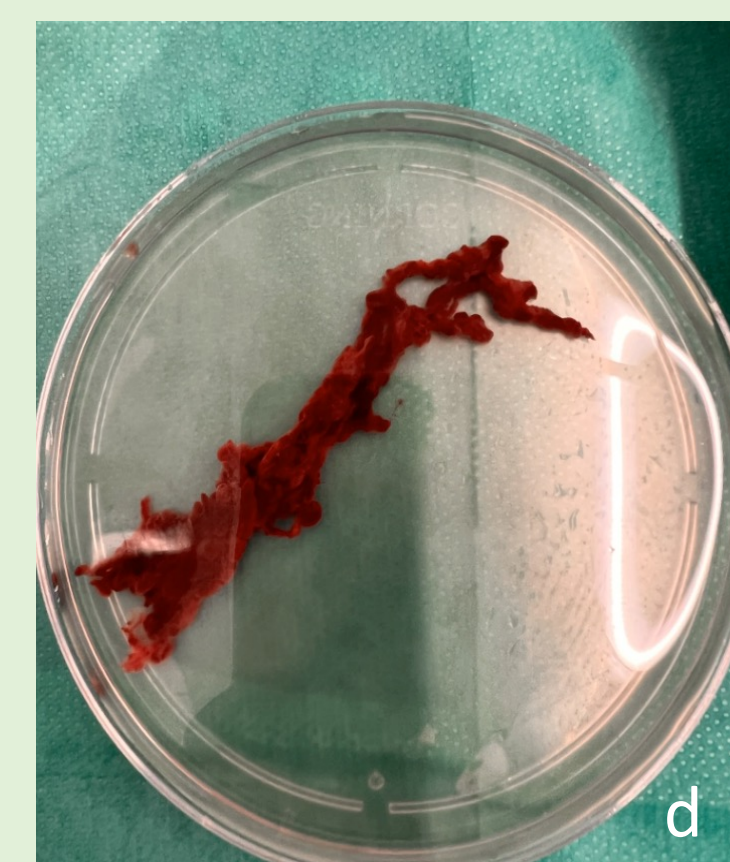
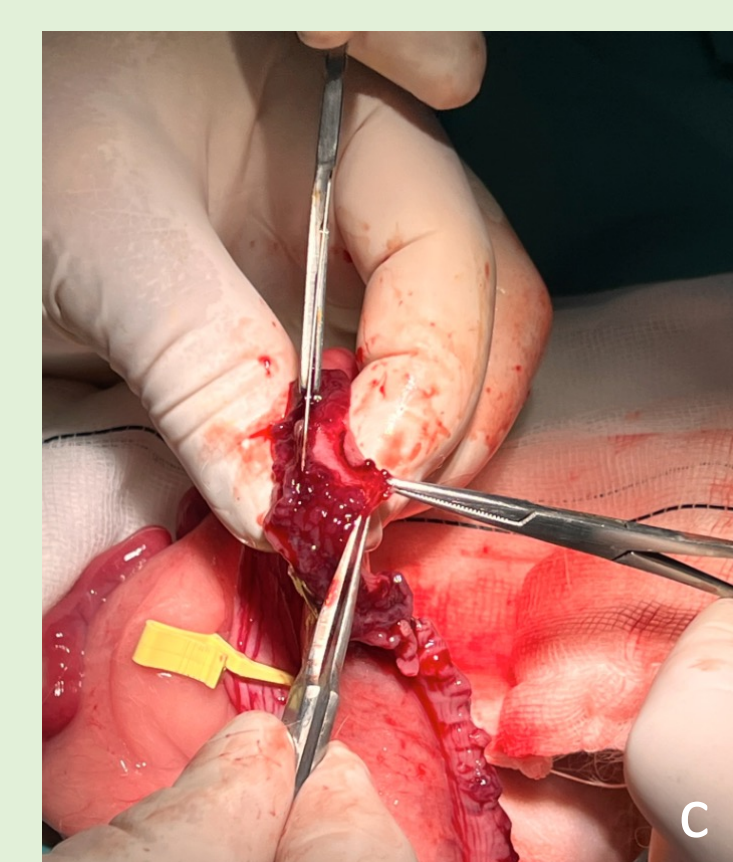
- 5 rabbits were allocated to the treatment arm and 1 rabbit to the control group. PRP was injected at the endometrial-myometrial interface immediately following transplantation.
- Four weeks post operatively, each rabbit underwent IVF with the transfer of six early blastocysts to each uterine horn. Ultrasound was used to assess the endometrium prior to embryo transfer.



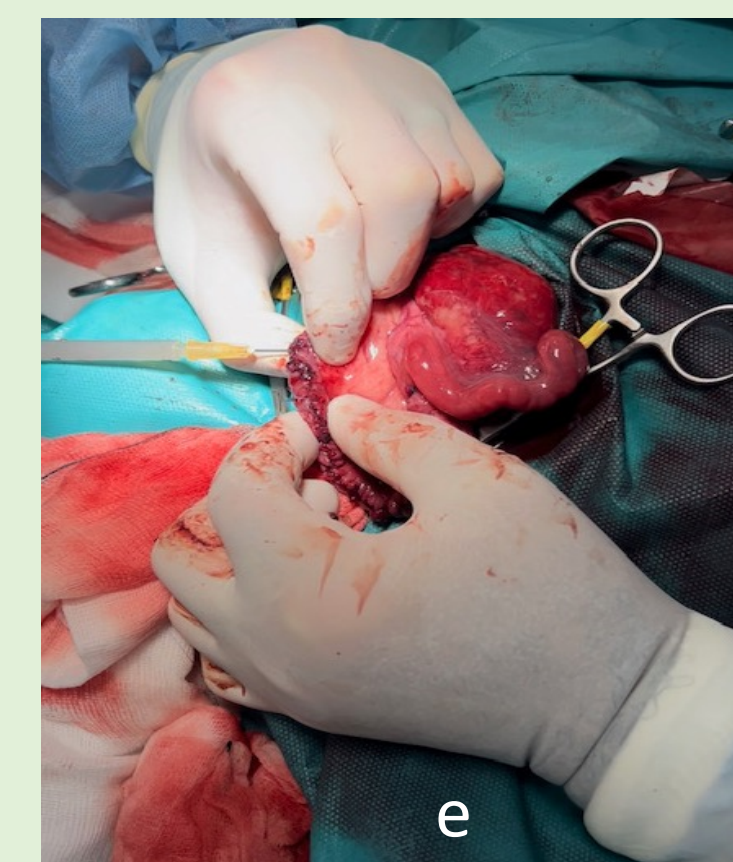
a= rabbit uterus with two uterine horns



b,c= resection of the endometrium



d=endometrium, resected.



e= injection of PRP upon resuturing of the endometrium and closure of the uterus.

Results:

- Preliminary results are presented.
- 4 rabbits were alive at 2 weeks post operatively. In our preliminary study an implantation rate of 28.5% was achieved whereby no PRP was injected.
- In the current study of PRP following endometrial transplantation, **an implantation rate of 63%** was achieved.
- Histological analysis in the PRP treated group revealed healthy endometrium in operated horn and clear areas of regenerated endometrial stroma. There were no areas of haemorrhage in operated horn.

Conclusion:

- The use of PRP in the rabbit model of ETx appears to improve the implantation rate and regenerate endometrium to resemble that of the control arm. PRP is a promising treatment option for women with Ashermans syndrome.