

# IMPACT OF POSTOPERATIVE ADHESIONS ON RESIDUAL MYOMETRIAL THICKNESS AND UTERINE BLOOD FLOW AFTER CESAREAN SECTION IN A CYNOMOLGUS MONKEY MODEL

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## Objective

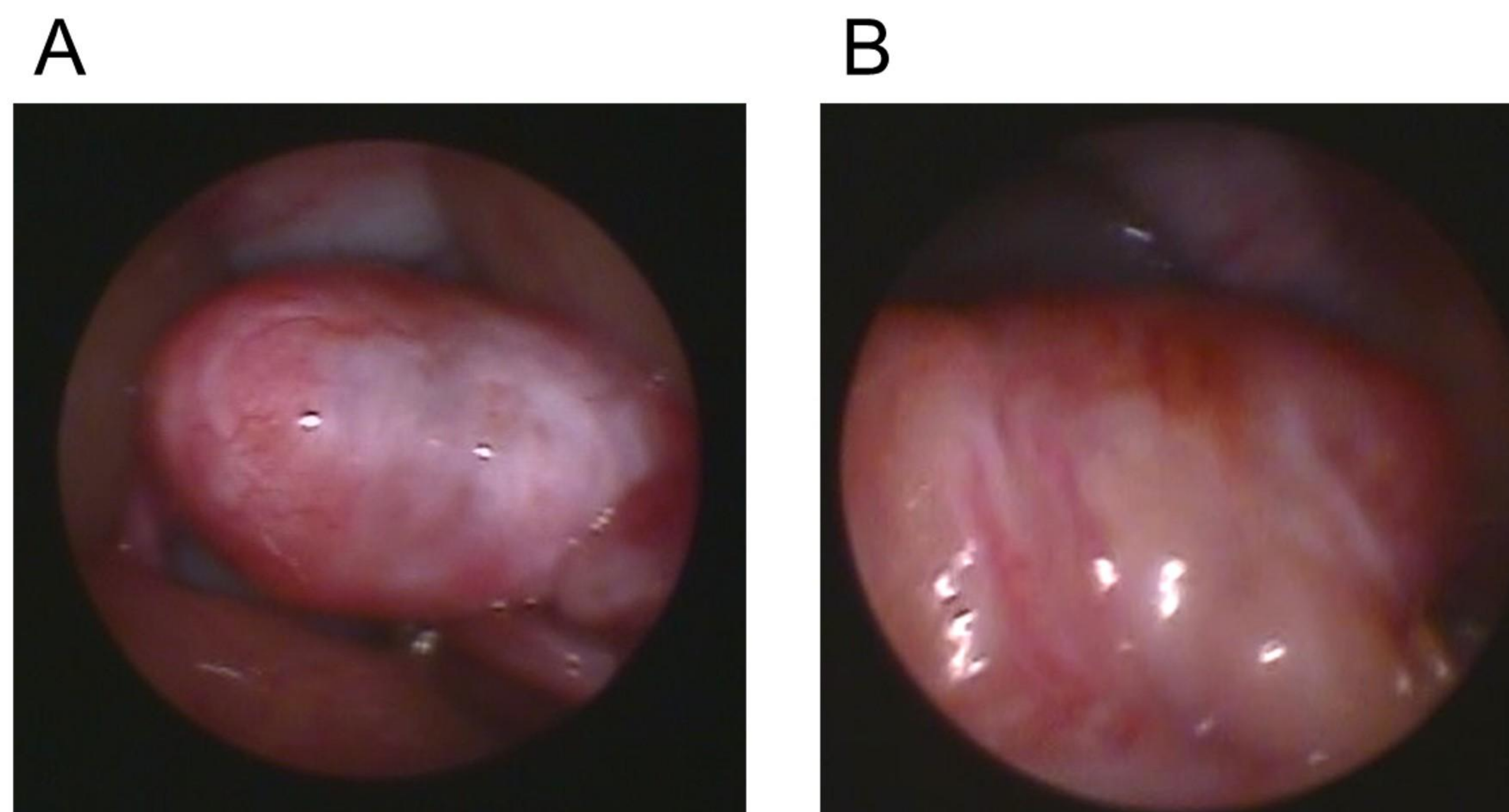
To evaluate the impact of postoperative adhesions on uterine blood flow and residual myometrial thickness (RMT) after Caesarean section (CS) closed with double-layer interrupted sutures (DIS) in a cynomolgus monkey model.

## Methods

Eight pregnant cynomolgus monkeys underwent CS with uterine closure using DIS. Laparoscopic assessment at 2 months postoperatively classified animals into an adhesion-positive group ( $n = 3$ ) and an adhesion-negative group ( $n = 5$ ). At 6 months post-CS, RMT at the suture site was measured using T2-weighted magnetic resonance imaging (MRI). Uterine blood flow at the incision site was quantitatively assessed using dynamic contrast-enhanced MRI, and the volume transfer constant (Ktrans) was calculated as an indicator of tissue perfusion.

## Results

Representative laparoscopic findings of the adhesion-positive and adhesion-negative groups are shown in **A** and **B**, respectively. At 6 months postoperatively, RMT was significantly thinner in the adhesion group than in the non-adhesion group (**C**) (adhesion group: 2.53 mm vs non-adhesion group: 3.74 mm,  $P < 0.05$ ). Ktrans values ( $\text{min}^{-1}$ ) at the uterine incision site were also significantly lower in the adhesion group compared with the non-adhesion group (**D**) (adhesion group: 0.047 vs non-adhesion group: 0.114,  $P < 0.01$ ), indicating reduced blood flow.



A, adhesion-positive group; B, adhesion-negative group.

## Conclusions

In this exploratory nonhuman primate study, postoperative adhesions after CS using interrupted sutures were associated with decreased thinner residual myometrium and uterine blood flow. Adhesion prevention may play an important role in optimizing uterine scar healing.

