



CASE STUDY – ADDITIVE MANUFACTURING

**COMPLEX SEPARATION OF CONJOINED TWINS SUCCESSFULLY
PLANNED WITH 3D PRINTING**

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What are Conjoined twins

Conjoined twins, also known as **Siamese twins**, are **identical twins** joined *in utero*. A very rare phenomenon, the occurrence is estimated to range from 1 in 49,000 births to 1 in 189,000 births





How does 3D printing help?

1. CT scans, captured with a high level of contrast,
2. color-coded, 3D model (Materialise's Mimics Innovation Suite.)
3. 3D print a detailed model of the twins' vital organs





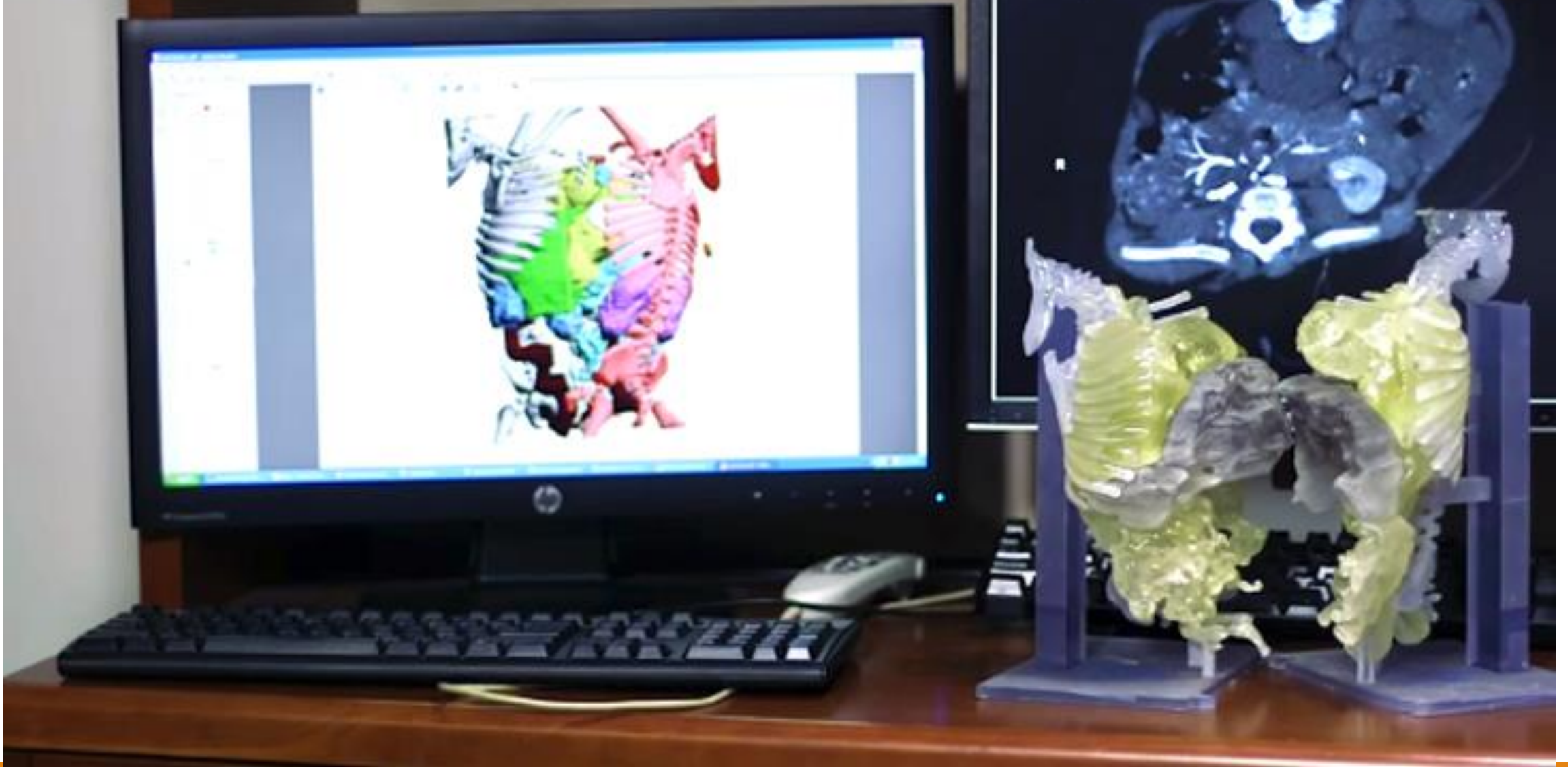
The case details

At Texas Children's Hospital, the twin daughters of Elysse **Mata**, Knatalye **Hope** and Adeline **Faith**, were born conjoined at the chest and abdomen “their **chest wall, lungs, pericardial sac, diaphragm, liver, intestines, colon** and **pelvis.**” So, the surgery to separate them would, indeed, be a complex one

3D printing and software provider **Materialise**,



Mata
1. Faith
2. Hope

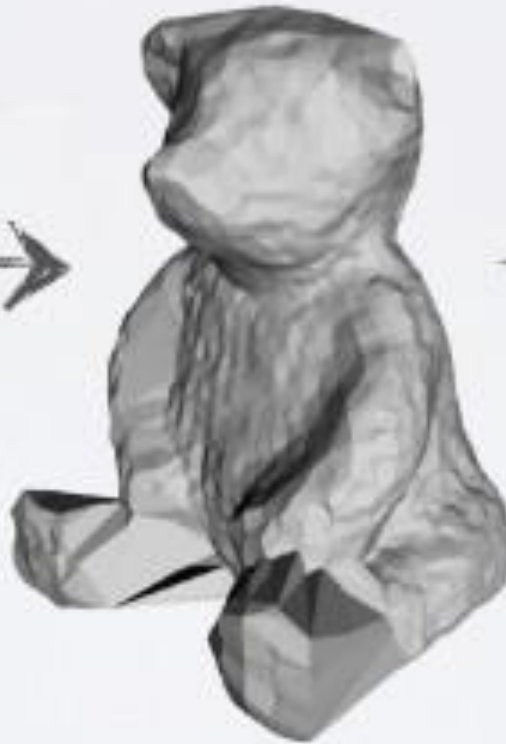




PointCloud

SurfaceMesh

Printable .stl







implanted
tissue
expanders



https://www.youtube.com/watch?v=VMsmdsOsvp4&feature=emb_rel_end