

# Induction of pancreatic cancer in a porcine model: Initial results

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## Purpose

To develop a porcine model of pancreatic cancer, which can be used to test new locoregional therapies.

## Methods

Adenovirus carrying the Cre-recombinase gene (AdCre) was injected into the pancreas of an Oncopig, which is a transgenic pig with Cre-inducible p53 and Kras mutations (5 sites in 2 pigs). Alternatively, AdCre was incubated *in vitro* with a pancreatic fine needle aspirate (2 sites in 2 pigs) or core biopsy (2 sites in 1 pig), then injected back into the same pig (subcutaneous or intra-pancreatic). Tumor growth was monitored by contrast-enhanced CT.

## Results

Injection of AdCre directly into the pancreas resulted in tumors at 0 of 5 sites. *In vitro* incubation of AdCre with a pancreatic fine needle aspirate resulted in tumors at 0 of 2 sites. *In vitro* incubation of AdCre with a pancreatic core biopsy resulted in tumor at 2 of 2 sites (one pancreatic and one subcutaneous). Core biopsy of the subcutaneous mass showed a spindle cell sarcoma. The pancreatic tumor grew to 3.7 cm, 16 days after tumor inoculation. The mass was hypovascular relative to pancreas on both arterial and portal venous phase CT. However, there was no dilation of the pancreatic duct. The mass was not visible on celiac angiogram, but was visible on selective catheter angiography of the branch of the splenic artery supplying the mass.

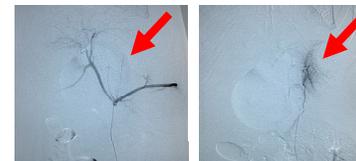
## Conclusions

Pancreatic cancer can be induced in a transgenic pig. This should enable testing of experimental ablation and intra-arterial therapies for pancreatic cancer.

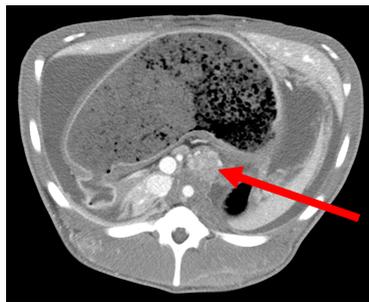
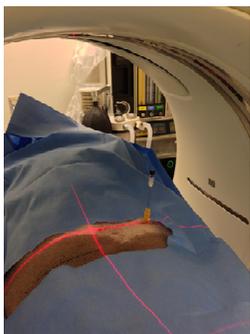


Pig pancreatic cancer.

Arrow: tumor  
String: duodenum



Left: Celiac angiogram  
Right: selective angiogram  
Arrows: pancreatic mass



Pig pancreatic cancer (arrow)

See Hooman Yarmohammadi's talk on intra-arterial treatment of pancreatic cancer on 3/5, 3pm, 143C.

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