Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

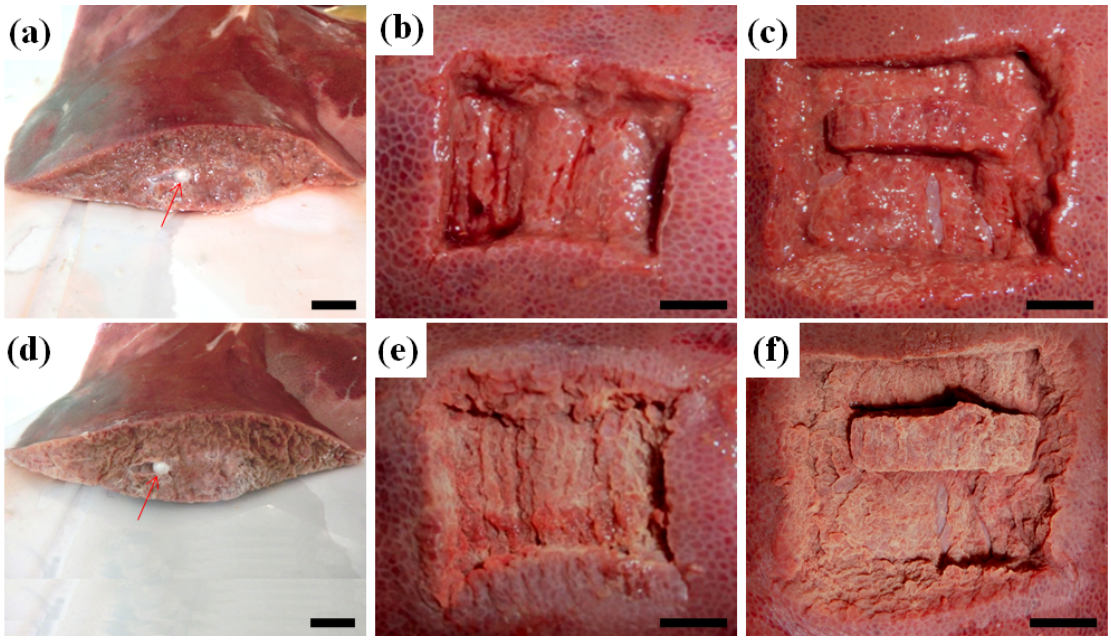

Fig.S1. (a-c) Three kinds of complex large-area wounds of pig livers. The artery blood vessel in Fig.S1a was blocked by a small piece of gelatin sponge (white dot, marked by a red arrow) to stop bleeding before OCA coating. The trench depth in Fig. S1b-c is about 5 mm. (d-e) The liver wounds after depositing a layer of OCA fiber film by airflow-directed *in situ* electrospinning, indicating that a new continuous membrane was reconstructed to protect the wound and stop bleeding rapidly. The scale bar in all figures is 10 mm.

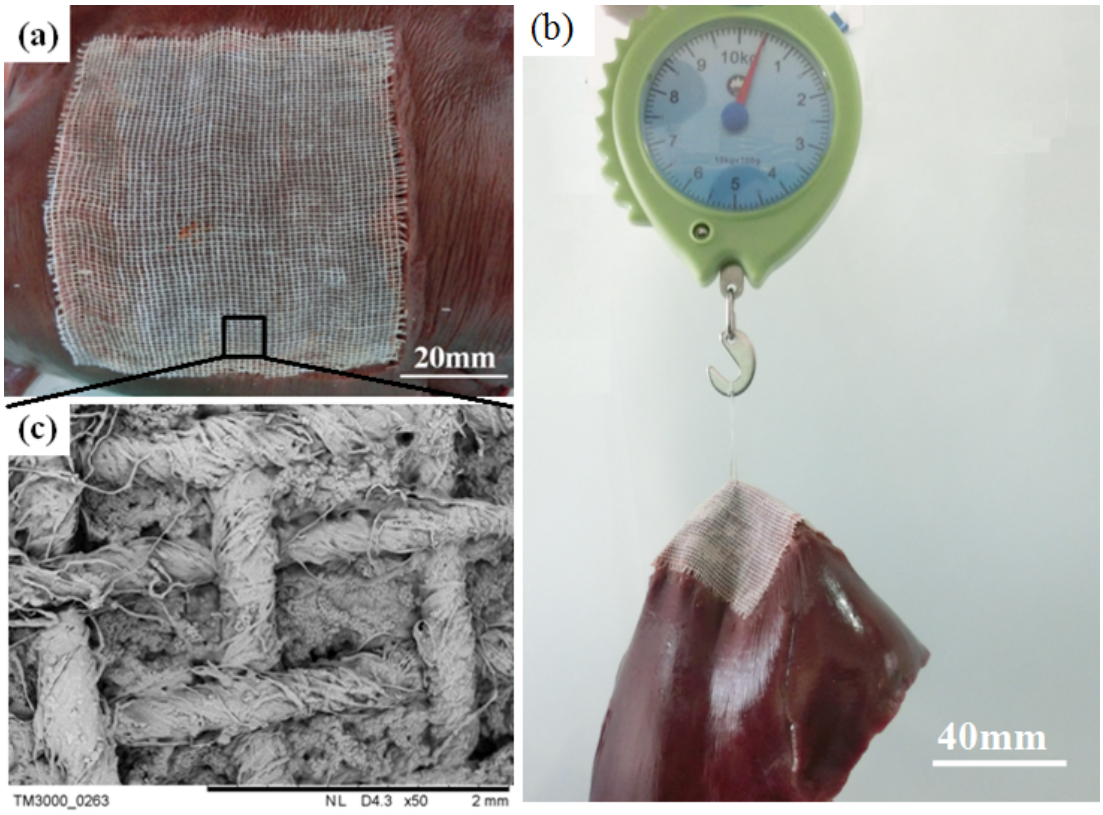

Fig.S2. (a) The liver wound was covered by a piece of surgical gauge, and then a layer of electrospun OCA was deposited on it. (b) The surgical gauge was fixed on the liver surface very strongly. The coatings show good flexibility, high strength and strong combination with the liver (larger than 30 N). (c) SEM image of the surgical gauge with deposited OCA glue.

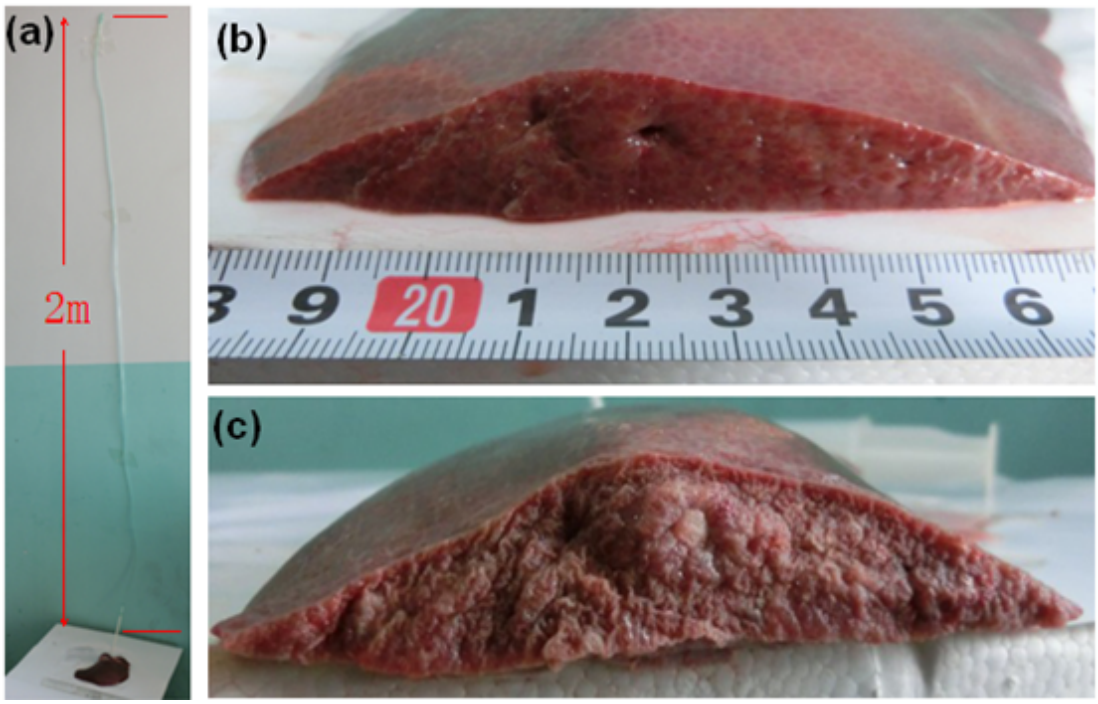

Fig.S3. In order to test the compactness and strength of the electrospun OCA fiber membrane, (a) a two-meter-high pipe was connected to the hepatic artery of a fresh pig liver; (b) cross section of the liver, artery blood vessel can be seen obviously; (c) before coating OCA membrane, the artery blood vessel was blocked by a small piece of gelatin sponge, then the entire wound was coated by a layer of OCA fiber membrane via airflow-directed *in situ* electrospinning, and then the two-meter-high pipe was filled with water, it was surprising to see that no blood/water seeping was observed for 12 h under the two-meter-high hydraulic pressure (~147 mm Hg), indicating very high compactness and strength of the electrospun OCA fiber membrane.

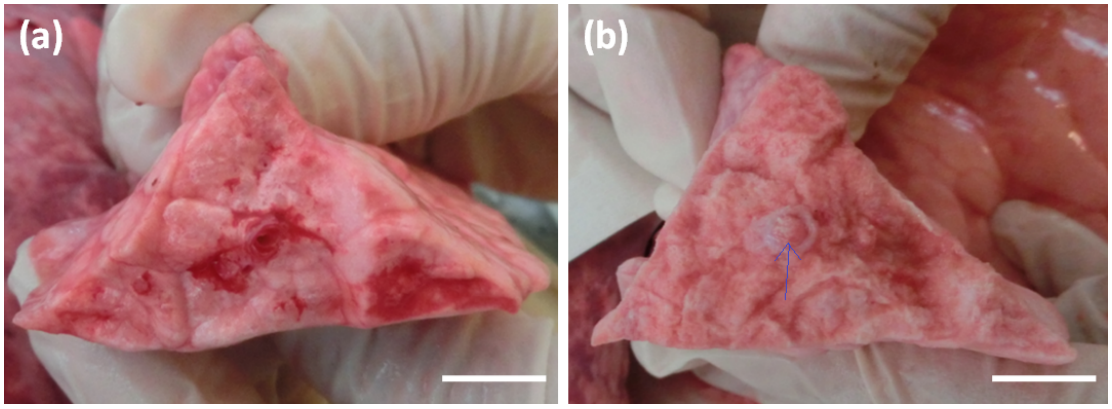

Fig.S4. Besides pig liver, in vitro experiment was also performed on fresh pig lung to test the leakproofness of the electrospun OCA membrane. (a) Part of the lung was cut and the wound was weeping. (b) Before electrospinning, the bronchi was blocked by a small piece of gelatin sponge (marked by an arrow), then the entire wound was coated by a layer of OCA fiber membrane via airflow-directed in situ electrospinning. No air seeping (air bubble) was observed on the wound when air was pumped into the lung (12 L min^{-1}, 2 kPa) and water was dropped onto the wound, indicating perfect leakproofness of the electrospun OCA membrane. Air leakage on the wound before electrospinning and no air seeping after deposition are demonstrated clearly in Supplementary Video 2. The scale bar is 10 mm.