How do you fix a face that's been blown off by shrapnel?

Video transcript – What Gillies Discovered

Like his predecessors, Gillies knew that excised strips of flesh needed to remain connected by means of a pedicle before they grew into their new home.

But as Lumley's case had proved, exposed flesh was dangerously prone to infection – infection which could kill.

By chance, Gillies then stumbled on an obscure Russian idea. Simply wrap up all the skin and tissue into a tube. It was called the tube pedicle.

It may look like a suitcase handle, but I think the tube pedicle was a stroke of surgical genius.

What's really clever about forming a tube is you get round the problem of infection, because what you're doing is all the living tissue and blood supply is enclosed within the outer dead layer of skin, which is waterproof and infection resistant, so you could keep it in place for weeks at a time without a serious risk of it going horribly wrong.

The tube pedicle became Gillies’ signature operation. And though the original idea may have been borrowed from the Russians, Gillies was to make it his own with a brilliant piece of surgical improvisation.

He called this the waltzing tube pedicle. If, for example, your chest was really burnt so you couldn't get the skin and tissue from there, he might collect it from your abdomen or even your leg.

He would then swing up this great, big mass of tube flesh and attach it to, say, the arm and then onto the face from there. Fantastic.