
Case Report
Patient history
A 66-year-old male with a history of chronic obstructive pulmonary disease, obesity (BMI of 32.8) and transient ischemic attack was scheduled for a coronary artery bypass operation for stable angina. The patient’s angiogram showed three vessel disease with good left ventricular function and an ECG sinus rhythm.

Surgical treatment
The patient underwent coronary artery bypass surgery with two distal grafts, left IMA to LAD, and a saphenous graft from the aorta to the RDP. The branches of the circumflex artery were too small and calcified to be bypassed. The sternal closure was performed with three stainless steel wires in the manubrium, four Sternal ZipFix on the sternal body and two wires distally in the xiphoid region.

Postoperative management
The postoperative management was successful. The patient was extubated after three hours and transferred to recovery after six hours. There were no complications and no complaints of sternal pain or instability. The patient was discharged after six days.

The patient agreed to undergo a CT-scan on the third postoperative day to evaluate the sternal closure. The CT-scan showed a perfect alignment of the sternal halves. (1,2,3)

Results*
Wound healing was good with no signs of infection.

Surgeon comments
“This hybrid sternal closure technique with stainless steel wires and Sternal ZipFix has been used in our institution in 50 patients without any instance of sternal instability or dehiscence.”

*Results from case studies are not necessarily predictive of results in other cases. Results in other cases may vary.

Figure 3: Coronal oblique reconstruction using Multiplanar Reconstruction (MPR) with 22 mm slice thickness

CT visualization
Although the Sternal ZipFix cannot be detected with normal x-ray, the implants can be viewed with CT-scan and digital imaging techniques.

The Sternal ZipFix implants can be seen with this patient with the following CT-scan and digital imaging parameters:

CT-scans performed using Philips iCT 256 scanner.
Protocol: Helical CT-scan thorax, 209 mAs 120 kV
Radiation exposure: Total DLP 411.2 mGy*cm
Reconstruction: Bone filter, slice thickness 1 mm
Post processing: Extended Brilliance Workspace (EBW, Philips)

Figure 4: 3D volume rendering and editing

Surgeon Profile
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