**Supplement 1.** Transoesophageal echocardiogram (TOE) imaging for the case 1 in kissing-Watchman LAA closure procedures. A) Pre-implant TOE, showing a single-lobulated left atrial appendage (LAA) with a giant ostium. B) A 27 mm Watchman occludes a part of the LAA leaving a 12.3mm residual stump uncovered. C) An additional 21 mm Watchman occluder kisses the previously implanted 27 mm Watchman occluder. D) TOE during operation confirms a complete LAA closure. E) Follow-up TOE at three months shows a newly formed gap of 4.6mm between 27mm Watchman and LAA. F) TOE at 12 months shows an adequate occlusion with a shrinking residual shunt of 1.8mm, without thrombi on the devices.

**Supplement 2.** Transoesophageal echocardiogram (TOE) imaging for the case 2 in kissing-Watchman LAA closure procedures. A) Pre-implant TOE reveals a single-lobulated left atrial appendage (LAA) without ridgelike pectinate muscle with a giant ostium of 36mm. B) A 27 mm Watchman occludes a part of the LAA leaving a 24mm opening stump. C) Complete LAA occlusion is achieved after implantation of another 27mm Watchman. D) TOE shows that the two Watchman device was deployed adjacently without residual flow. E) Follow-up TOE at three months shows newly formed residual shunt of 1.6mm between the kissing-device. F) TOE at 12 months shows a persistent mild residual flow between them, without thrombi on the devices.

**Supplement 3.** Transoesophageal echocardiogram (TOE) imaging for the case 3 in kissing-Watchman LAA closure procedures. A) Pre-implant TOE reveals many pectinate muscles locating inside a single-lobulated left atrial appendage (LAA) with a giant ostium of 33mm. B) A 27 mm Watchman occludes a part of the LAA leaving a 14mm gap uncovered. C) Complete occlusion of the LAA is achieved after implantation of a 21mm Watchman next to the first occluder. D) Three-dimension TOE shows that the two Watchman device are deployed in a kissing fashion. E) TOE post-implantation shows a complete closure F) TOE at 3 months confirms a complete closure.