WHAT IS CLAIMED IS:

1. A transseptal insertion device which is suitable for facilitating precise and safe transseptal puncture of a cardiac interatrial septum, comprising:

a sheath that defines at least one lumen therein and has a distal end that is closest to the cardiac interatrial septum of a patient when the transseptal insertion device is in use and a proximal end that is external to the patient;

one or more balloons that are contained in the sheath when deflated, wherein the balloons, when inflated and the transseptal insertion device is in use, overhangs and extends past the distal end of the sheath, preventing accidental puncturing of the cardiac interatrial septum and stabilizing the transseptal insertion device against fossa ovalis of the cardiac interatrial septum;

one or more hypotubes connected to the one or more balloons, wherein the one or more hypotubes are configured to inflate and deflate the one or more balloons;

one or more ultrasound transceivers that emit and receive ultrasound waves, and convert the ultrasound waves to electrical signals; and

a dilator that is positioned within the at least one lumen, wherein the dilator has a distal end and is designed to and is capable of precisely puncturing the cardiac interatrial septum.

2. The transseptal insertion device of claim 1 further comprising at least one lumen shaft contained in the sheath, wherein said at least one lumen shaft defines the at least one lumen and the dilator is positioned in said at least one lumen shaft.

3. The transseptal insertion device of claim 2 wherein the one or more hypotubes are contained in the sheath outside said at least one lumen shaft.

4. The transseptal insertion device of claim 1 wherein the one or more ultrasound transceivers are located on surfaces of the one or more balloons.

5. The transseptal insertion device of claim 1 wherein the one or more ultrasound transceivers are located between the balloons.

6. The transseptal insertion device of claim 1 wherein the one or more ultrasound transceivers are oriented towards the cardiac interatrial septum when the one or more balloons are inflated and the distal end of the sheath is oriented towards the cardiac interatrial septum.

7. The transseptal insertion device of claim 1 wherein the one or more ultrasound transceivers are oriented perpendicular to the sheath when the balloons are deflated.

8. The transseptal insertion device of claim 1 wherein the one or more ultrasound transceivers are configured in the shape of a disc.

9. The transseptal insertion device of claim 1 wherein the one or more ultrasound transceivers are connected to an external imaging device wirelessly or through a wire that runs via the sheath, and transmit the electrical signals to the external imaging device to produce images of the cardiac interatrial septum from the received electrical signals.

10. The transseptal insertion device of claim 1 wherein the dilator includes cap or crown with radio frequency (RF) energy capability or capable of delivering RF energy.

11. A transseptal insertion device which is suitable for facilitating precise and safe transseptal puncture of a cardiac interatrial septum, comprising:

a sheath that defines at least one lumen therein and has a distal end that is closest to the cardiac interatrial septum of a patient when the transseptal insertion device is in use and a proximal end that is external to the patient;

at least one balloon that is connected to the distal end of the sheath, wherein the balloon, when inflated and the transseptal insertion device is in use, overhangs and extends past the distal end of the sheath, preventing accidental puncturing of the cardiac interatrial septum and stabilizing the transseptal insertion device against fossa ovalis of the cardiac interatrial septum;

at least one hypotube connected to the at least one balloon, wherein the at least one hypotube is configured to inflate and deflate the at least one balloon;

one or more ultrasound transceivers that emit and receive ultrasound waves, and convert the ultrasound waves to electrical signals; and

a dilator that is positioned within the at least one lumen, wherein the dilator has a distal end and is designed to and is capable of precisely puncturing the cardiac interatrial septum.

12. The transseptal insertion device of claim 11 further comprising at least one lumen shaft contained in the sheath, wherein said at least one lumen shaft defines the at least one lumen and the dilator is positioned in said at least one lumen shaft.

13. The transseptal insertion device of claim 12 wherein the at least one hypotube is contained in the sheath outside the at least one lumen shaft.

14. The transseptal insertion device of claim 13 wherein the one or more ultrasound transceivers are located on a surface of the at least one balloon.

15. The transseptal insertion device of claim 11 wherein the one or more ultrasound transceivers are oriented towards the distal end of the sheath when the at least one balloon is inflated and the distal end of the sheath is oriented towards the cardiac interatrial septum.

16. The transseptal insertion device of claim 11 wherein the one or more ultrasound transceivers are oriented perpendicular to the sheath when the at least one balloon is deflated.

17. The transseptal insertion device of claim 11 wherein the one or more ultrasound transceivers are connected to an external imaging device wirelessly or through a wire that runs via the sheath, and transmit the electrical signals to the external imaging device to produce images of the cardiac interatrial septum from the received electrical signals.

18. The transseptal insertion device of claim 11 wherein the dilator includes cap or crown with radio frequency (RF) energy capability or capable of delivering RF energy.