

Claims

1. A system comprising:
 - a lock and release connector of any one of claims 9 to 20;
 - an outer tube having a distal opening;
 - an implantable medical device disposed in the outer tube wherein the medical device has an extension; and
 - wherein the extension is interposed between the body and the door.
2. A catheter assembly comprising:
 - the system of claim 1;
 - an inner tube disposed in the outer tube;
 - wherein the lock and release connector is connected to the inner tube.
3. The catheter assembly of claim 2, wherein the implantable medical device further comprises at least a second extension.
4. The catheter assembly of claim 3, wherein the second extension is longer than the first extension.
5. The catheter assembly of claim 4, wherein the lock and release connector is configured to release the first extension before releasing the second extension, such that the implantable medical device can fully expand after the first extension is released and before the second extension is released.
6. The catheter assembly of any one of claims 2-5, wherein the lock and release connector further comprises a second door.
7. The catheter assembly of any one of claims 2 to 6, wherein the extension is configured to move the at least one door from the first position to the second position.
8. The catheter assembly of any one of claims 2-7, wherein the extension is spring-like.

9. A lock and release connector for a trans-catheter implantable device comprising:
a body; and
at least one door engaged with the body, wherein the door is moveable from a first position to a second position.
10. The lock and release connector of claim 9, wherein the door is integral with the body.
11. The lock and release connector of claim 9 or 10, wherein the door is connected to the body.
12. The lock and release connector of any one of claims 9-11, wherein the door is hingedly connected to the body.
13. The lock and release connector of any one of claims 9-12, wherein the door comprises a shape memory material.
14. The lock and release connector of any one of claims 9-13, wherein the door comprises a nickel titanium alloy.
15. The lock and release connector of any one of claims 9-14, further comprising at least one fastener connecting at least one end of the door to the body.
16. The lock and release connector of any one of claims 9-15, wherein the door is actively controlled to move from a first position to a second position.
17. The lock and release connector of any one of claims 9-16, further comprising a wire, a screw, a separate hinge, or a pin connecting the body and the door.
18. The lock and release connector of any one of any one of claims 9-17, further comprising at least one spring exerting force on the door.
19. The lock and release connector of any one of claims 9-18, further comprising a second door moveable from a first position to a second position;
wherein the first door and the second door are sequentially moveable from the respective first position to the respective second position.

20. The lock and release connector of claim 19, further configured to move the first door to the second position such that a first extension of an implantable medical device can be released therefrom while a second extension continues to be held under the second door.