

CLAIMS

1. A protective assembly for use during laparoscopic surgery, the assembly comprising: a thin membrane formed from non-toxic material, the membrane being sufficiently thin and maneuverable to be passed through a cannula of a trocar; a flexible connector extending from the thin membrane; and an insertable plunger to facilitate insertion of the membrane into the cannula and subsequently pass the membrane through the outlet of the cannula to allow the membrane to be spread over internal organs of the patient, the plunger comprising a shaft dimensioned to be inserted and passed through the cannula wherein a distal portion of the shaft is anchored to the flexible connector.
2. A protective assembly in accordance with claim 1 wherein the flexible connector is connected to a peripheral portion of the membrane.
3. A protective assembly in accordance with claim 1 or claim 2 a proximal portion of the insertable shaft comprises an enlarged head to limit inward movement of the shaft into the cannula of the trocar and prevent the shaft from falling through the trocar.
4. A protective assembly in accordance with any one of the preceding claims wherein the membrane comprises a plurality of fold regions to facilitate rolling or folding of the membrane to allow the membrane to pass through the cannula in a folded configuration.
5. A protective assembly in accordance with any one of the preceding claims wherein the membrane comprises at least two linear peripheral portions that are substantially transverse and preferably perpendicular to each other.
6. A protective assembly in accordance with claim 5 wherein the two linear peripheral portions are connected by at least one curved bridging portion to orient the linear peripheral portions in transverse configuration.
7. A protective assembly in accordance with claim 6 comprising a first curved bridging portion with a first arc length and a second curved bridging portion with a second arc length such that the first arc length is smaller than the second arc length to define a wing shaped membrane.
8. A protective assembly in accordance with any one of the preceding claims wherein width of the connector is substantially less than overall width of the membrane.
9. A protective assembly in accordance with any one of the preceding claims wherein length of the flexible connector is greater than the length of the cannula of the trocar.
10. A protective assembly in accordance with claim 9 wherein length of the flexible connector is at least twice the length of the cannula of the trocar.

11. A protective assembly in accordance with any one of the preceding claims wherein the membrane comprises opposed major membrane surfaces separated by thickness of the membrane, each membrane surface comprising rows of projections and recesses such that any two adjacently located projections are separated by a recess.
12. A protective assembly in accordance with claim 11 wherein each recess on one of the major membrane surfaces is shaped to form a trough and aligned with a projection on the other of the major membrane surfaces.
13. A protective assembly in accordance with claim 12 wherein each of the said projections on the major surfaces of the membrane extend generally in a transverse direction relative to a direction of the rows of the projections and recesses.
14. A protective assembly in accordance with any one of claims 11 to 13 wherein average height of the projections is substantially equal to average depth of the recesses.
15. A protective assembly in accordance with any one of claims 11 to 14 thickness of the membrane portion in between the adjacently located projections and recesses is substantially less than or equal to the average height of the projections and/or average depth of the recesses.
16. A protective assembly in accordance with any one of claims 11 to 15 wherein the membrane portions between adjacent projections and recesses facilitate folding or rolling of the membrane in the folded configuration.
17. A protective assembly in accordance with any one of preceding claims wherein the connector is fused with the membrane.
18. A protective assembly in accordance with any one of the preceding claims wherein the membrane is sufficiently heat tolerant to reduce or minimize accidental damage from ablation.
19. A protective assembly in accordance with any one of the preceding claims wherein the flexible connector is attached to a convergent peripheral portion of the membrane such that the convergent peripheral portion converges generally in a direction towards the shaft to facilitate rolling or folding of the membrane when pulled into the cannula of the trocar during use.
20. A protective assembly in accordance with claim 19 wherein width of the membrane gradually broadens from a location of attachment of the connector on the membrane.
21. A protective assembly in accordance with any one of the preceding claims wherein length of the flexible connector is adjustable.

22. A protective assembly for use during laparoscopic surgery, the assembly comprising: a thin membrane formed from non-toxic material, the membrane being sufficiently thin and maneuverable to be passed through a cannula of a trocar wherein the membrane comprises opposed major membrane surfaces separated by thickness of the membrane, each membrane surface comprising rows of projections and recesses such that any two adjacently located projections are separated by a recess.
23. A protective assembly in accordance with claim 22 wherein each recess on one of the major membrane surfaces is shaped to form a trough and aligned with a projection on the other of the major membrane surfaces.
24. A protective assembly in accordance with claim 23 wherein each of the said projections on the major surfaces of the membrane extend generally in a transverse direction relative to a direction of the rows of the projections and recesses.
25. A protective assembly in accordance with any one of claims 22 to 24 wherein average height of the projections is substantially equal to average depth of the recesses.
26. A protective assembly in accordance with any one of claims 22 to 25 wherein thickness of the membrane portion in between the adjacently located projections and recesses is substantially less than or equal to the average height of the projections and/or average depth of the recesses.
27. A protective assembly in accordance with any one of claims 22 to 26 wherein the membrane portions between adjacent projections and recesses facilitate folding or rolling of the membrane in the folded configuration.