

CLAIMS

1. A catheter system to reduce a risk of transfixing a blood vessel, the catheter system comprising:

a catheter adapter comprising a proximal end, a distal end, and a lumen extending therebetween, the catheter adapter having a top and a bottom, the bottom of the catheter adapter being configured to be oriented against a patient's skin;

a catheter extending distally from the distal end of the catheter adapter; and

an introducer needle extending through the catheter, the introducer needle having a cylindrical shape that extends along a central axis such that an outer edge at a top of the cylindrical shape and an opposing outer edge at a bottom of the cylindrical shape extend parallel with the central axis and such that the central axis, the outer edge and the opposing outer edge all extend within a common vertical plane, the introducer needle comprising:

a sharp distal tip; and

a primary bevel extending

proximally from the sharp distal tip and intersecting the outer edge at the top of the cylindrical shape of the introducer needle, wherein the primary bevel is planar and oriented at a primary bevel angle of 22.2° with respect to the central axis, wherein a line that extends along the primary bevel and intersects the sharp distal tip and the outer edge at the top of the cylindrical shape of the introducer needle lies within the common vertical plane;

a secondary bevel extending proximally from the sharp distal tip on a first side of the central axis and below the central axis, the secondary bevel being planar and intersecting the primary bevel along a first intersection line, wherein the first intersection

line is angled 22° from the central axis, the secondary bevel being oriented vertically when in a 30/60 isometric view; and

a tertiary bevel extending proximally from the sharp distal tip on a second side of the central axis and below the central axis, the tertiary bevel being planar and intersecting the primary bevel along a second intersection line, wherein the second intersection line is angled 22° from the central axis, wherein the tertiary bevel is symmetrical to the secondary bevel relative to the central axis.

2. The catheter system of claim 1, wherein the introducer needle further comprises a line that extends proximally from the sharp distal tip and intersects the opposing outer edge at the bottom of the cylindrical shape.
3. The catheter system of claim 1, wherein the secondary bevel and the tertiary bevel extend to the opposing outer edge at the bottom of the cylindrical shape.