Stomach

Occupies epigastric, left hypochondriac and umbilical regions

Sickle shaped	J shaped
Cadaver	Living

- 3 types:
- Sthenic type, hypersthenic type, hyposthenic type

Parts

- Two curvatures- Lesser, greater
- Subdivisions- Fundus, body and pylorus
- Two surfaces- Antero superior, postero inferior

Cardiac Orifice

- 2.5 cm to left of median plane, behind 7th costal cartilage
- Opposite T11 vertebra

Pyloric Orifice

- 1.25 cm to right of midline
- Lower border of L1

Anteriorly
Greater sac, quadrate lobe

Posteriorly
Neck of pancreas separated by lesser sac

Lesser Curvature

- Incisura angularis: Dependent part
- Two layers of lesser omentum attached: Anastomosis of right and left gastric vessels

Greater Curvature

- Superficial
- 4-5 times longer
- Begins at cardiac notch
- Fundus- 5th left intercostal space
- Attachments:
- Cardiac end- Gastro phrenic ligament
- Fundus- Gastro splenic ligament
- Anterior 2 layers of greater omentum- Anastomosis of left and right gastro epiploic vessels

Relation of Antero Superior Surface

Anteriorly

- Left lobe of liver- Right side
- Diaphragm, gastric impression of spleen between fundus and diaphragm- Left

Gastric Triangle

- Area in contact with anterior abdominal wall
- Right side- Lower border of liver
- Left side- Left costal margin

- Below- Transverse colon

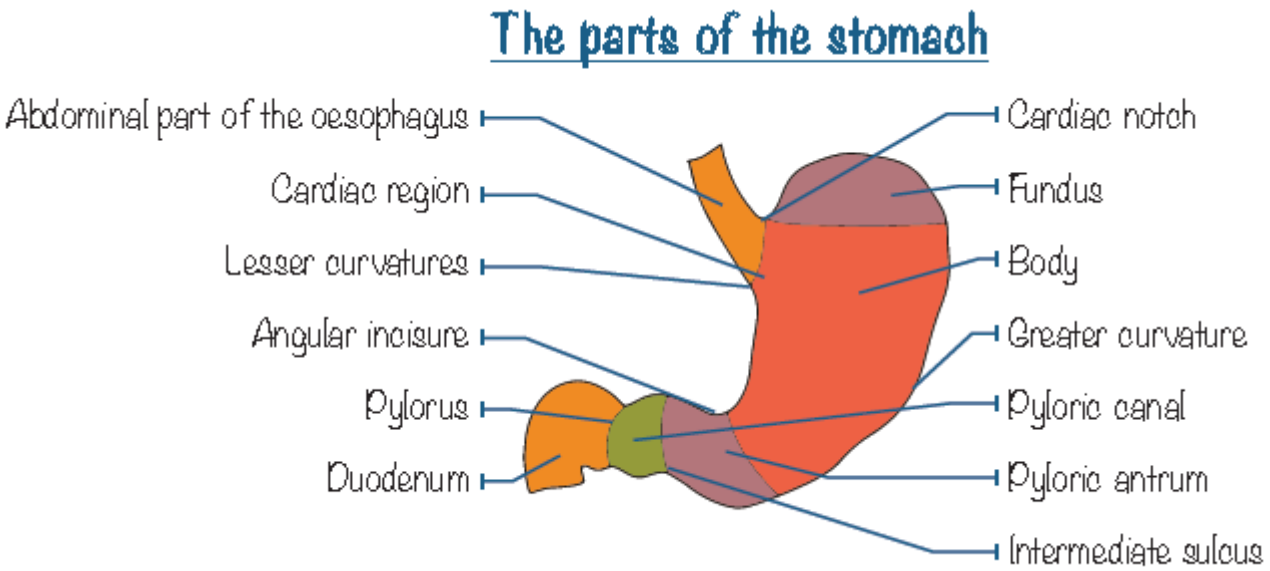
Traube's Space:

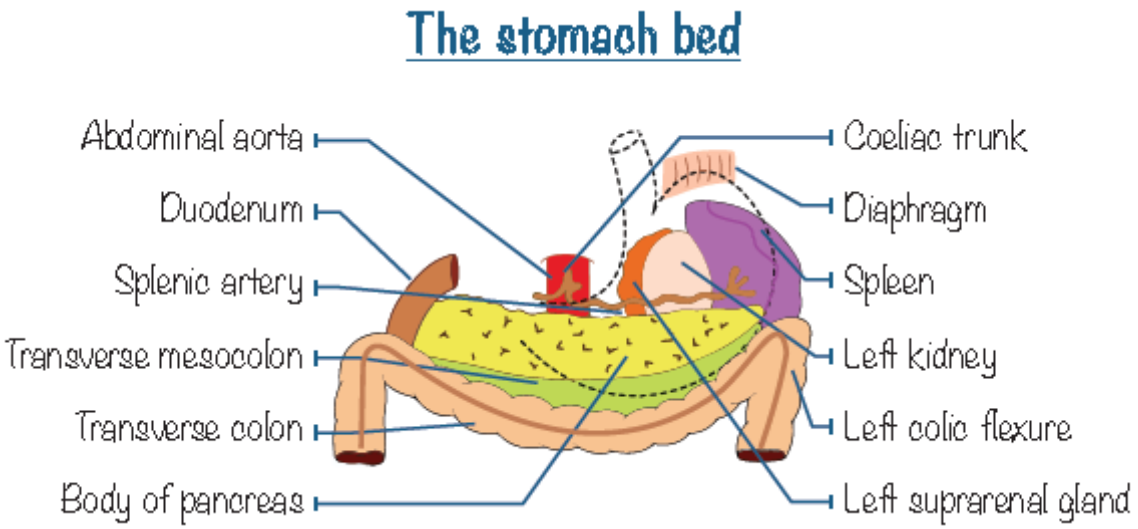
Overlying fundus

ABOVE	Lower border of left lung	RIGHT	Lower border of left lobe of liver
BELOW	Left costal margin	LEFT	Lateral end of spleen

Postero Inferior Surface:

Covered with lesser sac of peritoneum





Stomach Bed

- Diaphragm
- Left kidney
- Left suprarenal gland
- Pancreas
- Transverse mesocolon
- Left colic flexure
- Splenic artery
- Spleen
- Pancreas (except tail)
- Splenic artery

Stomach Subdivisions

- Fundus- Above line passing through cardiac notch
- Body
- Pyloric part- Pyloric antrum, pyloric canaland pylorus

Structure of Stomach

Serous Coat

- Peritoneal
- Covers entire organ except: Lesser and greater curvature, bare area of stomach

Muscular Coat:

3 layers of muscles: Outer longitudinal, middle circular, inner oblique

Circular Muscle:

Thickened to form- Pyloric sphincter

Oblique Muscle

- Series of inverted U shaped loops
- Right free margin

Mucous Membrane

- Soft velvety
- Longitudinal temporary mucous folds
- Epithelium- Simple columnar epithelium
- Lamina propria
- Muscularis mucosa- Outer circular, middle longitudinal and inner circular

Arterial Supply:

From coeliac trunk

Left Gastric

- Principal artery of the stomach, supplies upper 2/3rd
- Along lesser curvature

Right Gastric

- Branch of common hepatic artery
- Anastomose with left gastric artery within lesser omentum

Short Gastric:

Splenic artery branches to fundus

Left Gastro Epiploic:

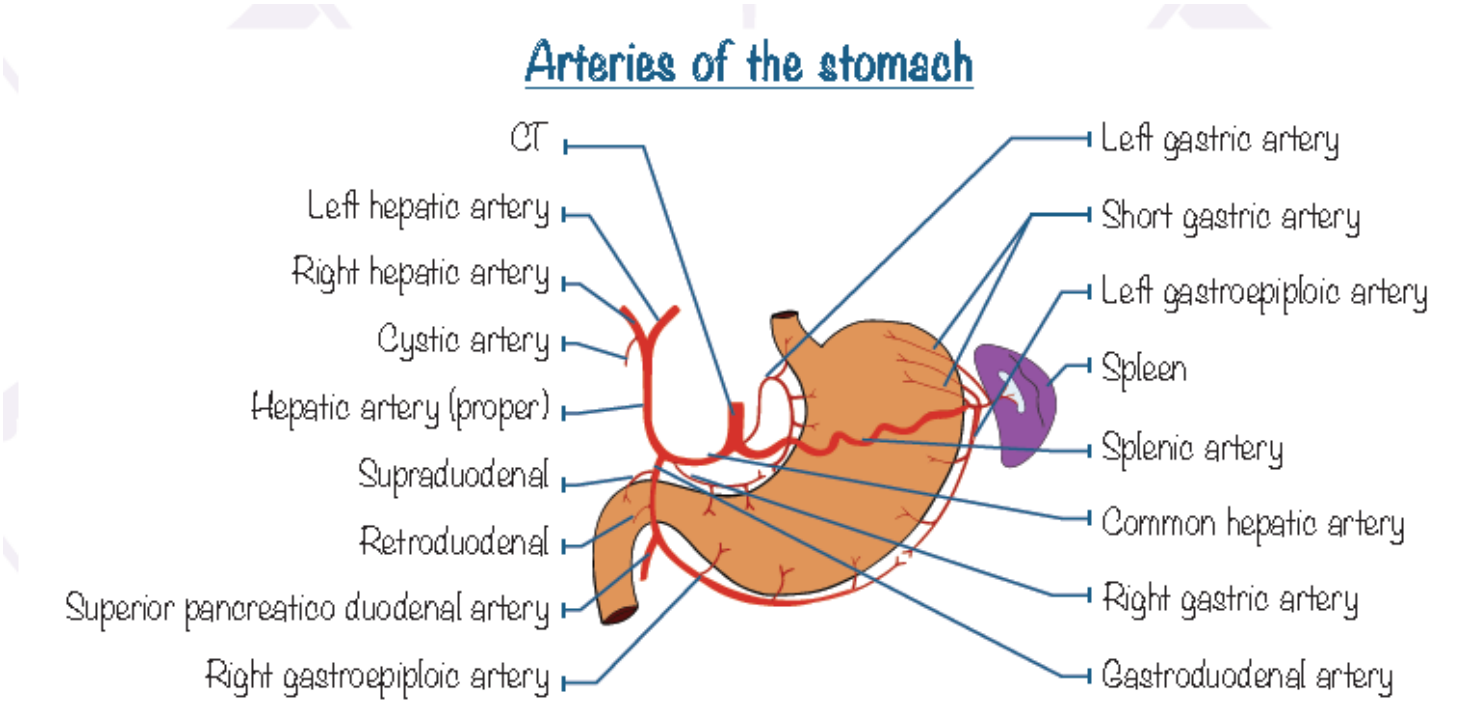
Splenic artery branch → via gastro splenic ligament → reaches greater curvature

Right Gastro Epiploic

Branch of gastro duodenal artery → Anastomose with left gastro epiploic artery in greater curvature.

Posterior Gastric Artery:

From splenic artery → posterior wall of fundus via gastro phrenic ligament

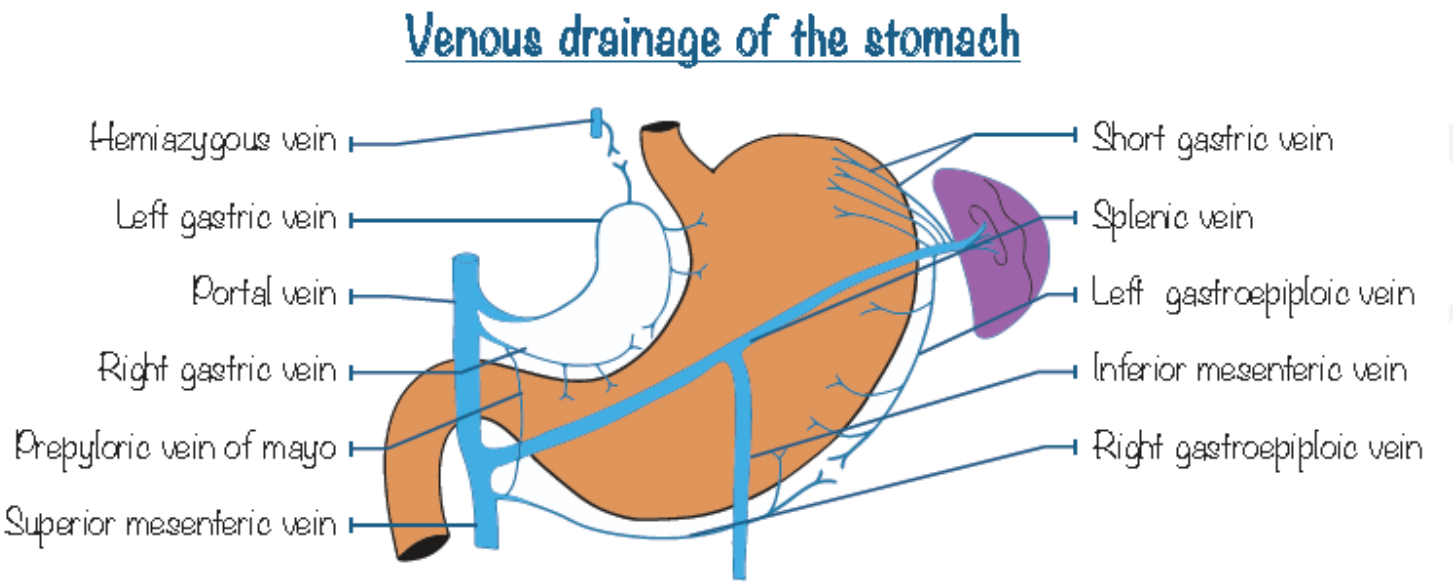


Distribution

- Sub serous, intra muscular and submucous plexus
- Long mucosal arteries pierce muscularis mucosae
- No submucosal plexus along lesser curvature
- Submucous coat- Arterio venous anastomoses exist

Venous Drainage:

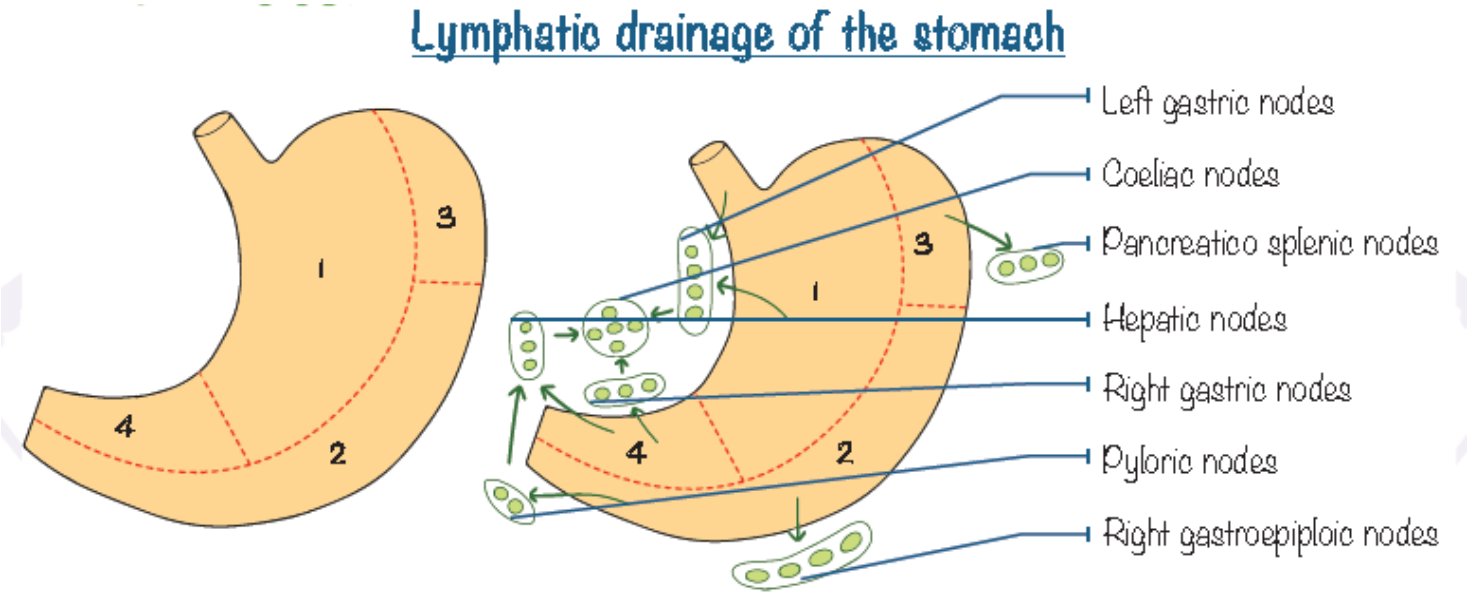
Prepyloric vein has no corresponding artery



Portocaval Anastomosis

- Around abdominal part of oesophagus
- Between oesophageal tributaries of left gastric and inferior hemiazygous veins

Lymphatic Drainage



A) Lymphatic territories B) Lymph node groups drawing lymphatic territories of the stomach

- 3 plexus: Submucous, intramuscular and subserous
- Begin as subepithelial lymphatic radicles

Lymphatics from left of fivertical line of cardiac orifice
Through gastro splenic and lieno renal ligaments

Pancreatico splenic nodes

Upper 2/3rd of the right part of the stomach
Along lesser curvature, between layers of lesser omentum
Left gastric lymph nodes

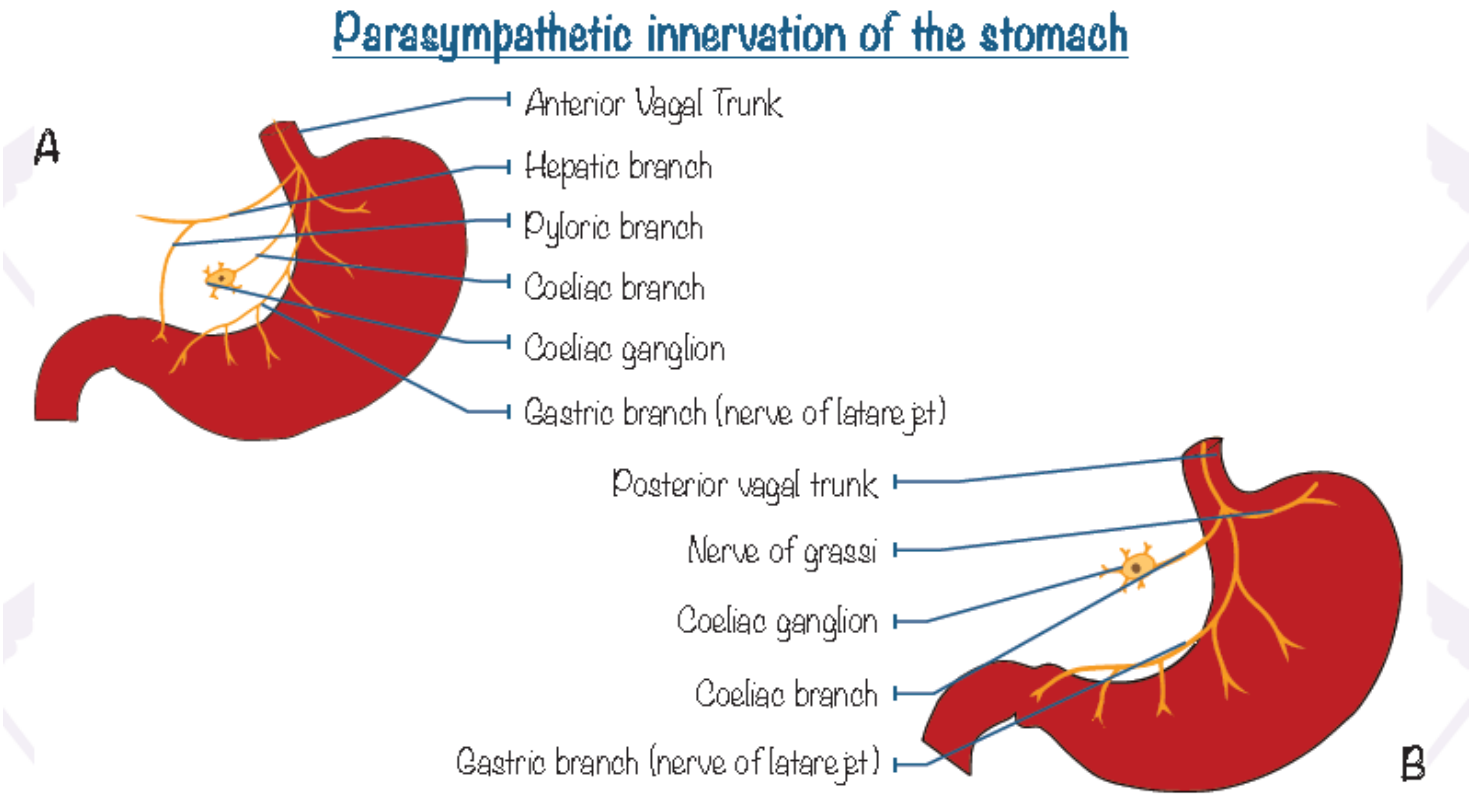
Lower third of right part
Towards greater curvature
Right gastro epiploic lymph nodes

Pyloric part
• Hepatic group • Pyloric group • Left gastric lymph nodes
Coeliac group of pre aortic nodes

Nerve Supply

Sympathetic Supply	Parasympathetic Supply
From coeliac plexus	Vagus nerves
• Pre ganglionicmotor fibres arise from lateral horn cells of T6-T9 → Greater splanchnic nerves → Coeliac plexus → Post ganglionic fibres arise → Stomach • Vasomotor • Stimulation of pyloric sphincter and Inhibition of gastric musculature • Convey painful sensations from the stomach	• Anterior vagal trunk • Formed by left vagus • Divides to hepatic and gastric branches • Hepatic branch → Reach porta hepatis → Ascending and descending (pyloric) branches - Pyloric branch (inverted Y) → Pre pyloric stomach, pyloric sphincter and duodenum - For selective vagotomy- Pre pyloric branches are left undivided

- Gastric branch:
- Except pre pyloric region
- Main gastric branch- Nerve of Latarjet
• Posterior vagal trunk
• Right vagus
• Gastric and coeliac branches
• Main gastric branch- Nerve of Latarjet
• Separate branch to stomach fundus- Nerve of Grassi
• Coeliac branches joinswith coeliac plexus
• Dorsal nucleus of vagus → preganglionic fibres → vagus → myenteric and submucous plexus
• Secretomotor
• Stimulate gastric musculature, inhibit pyloric sphincter



Ligaments of Stomach

- Lesser omentum
- Greater omentum
- Gastro splenic ligament/third omentum
- Gastro phrenic ligament
- Left or superior gastro pancreatic fold

Lesser Omentum

- Two layers of peritoneal fold
- Connects lesser curvature and 2.5 cm proximal duodenum to liver
- Hepato-gastric and hepato-duodenal part
- Right free margin forming anterior boundary of epiploic foramen
- Anterior layer from greater sac and posterior layer from lesser sac

Contents

- Anastomosis of left and right gastric vessels
- Free margin: Portal vein, bile duct, hepatic artery, nerve plexus

Development:

Posterior part of ventral mesogastrium

Greater Omentum

- Largest peritoneal fold
- Stomach to transverse colon- Gastro colic omentum
- Anterior and posterior sheets with two layers
- First and fourth layer- From greater sac
- Second layer and third- From lesser sac

Attachments

Anterior Sheet	Posterior Sheet
• First and second layers • Attached to greater curvature and proximal 2.5 cm of duodenum • Lower free margin	• Third and fourth layers • Attached to antero superior surface of transverse colon • Third and fourth layers of greater omentum enclose transverse colon

Contents

Between First And Second Layers	Between Second And Third Layers	Between Third AndFourth Layer
• Anastomose of right and left gastro epiploic vessels • Gastric arcade along greater curvature • Epiploic arcade	By puberty, fuses	Longitudinal extension of vessels from anastomosis

Functions

- Store house of fat
- Abdominal police guard- Greater omentum wraps an inflamed organ

Gastro Splenic Ligament

- Peritoneal fold of two layers
- Connects stomach fundus to upper lip of hilum of spleen
- Anterior layer from greater sac
- Posterior layer from lesser sac
- Contains short gastric and left gastro epiploic vessels

Gastro Phrenic Ligament

- Triangular fold of peritoneum
- Derived from lesser sac
- Connects bare area behind the cardiac end of stomach to left crus of diaphragm
- Contains left gastric artery

Notes

Abdominal policeman- Greater omentum	
Vessel traversing mesocolon is middle colic artery	

Inferior mesenteric vein- Content of para duodenal fossa	
Stomach do not drain into pre aortic lymph nodes directly	
Criminal Nerve OfGrassi	Branch of the right posterior vagus which passes to left behind esophagus ending in the gastric cardia
The Nerve OfLatarjet	• Posterior nerve of lesser curvature • Branch of anterior vagal trunk which supplies the pylorus
Most important blood supply of stomach- Left gastric artery	