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Interruptions or breaches in the continuity of skin surface either due to accident or assault or made by design by the surgeon in the course of a surgical procedure need to be made good. This is necessary not only to protect the inner structures from physical injury and from bacterial invasion, but also for cosmesis. Open wounds, if allowed to heal on their own, do so by second intention resulting in laying down of collagen by fibroblasts and a large and usually ugly scar.

The Edwin Smith Papyrus dating back to 2000 BC is credited to be the earliest surgical record containing an account of the use of sutures. In India, Susruta (600 BC) has described a number of techniques and materials for suturing.

The sutures may be obtained by natural means or may be totally synthetic. A third variety between these two extremes exists where a naturally occurring substance (e.g. across of intestine of sheep) may be treated with chemicals (e.g. chromium salts) to confer upon it special properties which render the
substances more useful to the surgeon. These are the semisynthetic sutures materials. It has been realised, however, that the method of suturing is as important as the suture itself.

There are advantages and disadvantages associated with the use of any of the several types of suture materials. Silk, for example, being non-absorbable, can not be used in the presence of infection since its fibres tend to harbour microorganisms in them. Plain catgut can not be used where the opposed edges need to be held together for a long period in the presence of stress and strain. A carefully carried out surgical procedure may be doomed for failure merely because of erroneous choice of suture material by the surgeon.

The function of the suture is primarily to hold the opposed edges together till, in most instances, natural healing processes take over the repair. The suture material is required, therefore, to stay in the wound for an optical period and to afford adequate strength while it is there.

An ideal suture is of adequate tensile strength. It produces a minimum of foreign body tissue reaction. It is non-electrolytic, non-capillary, non-allergic and non-carcinogenic.
It is comfortable to handle for the surgeon & the knots hold well without cutting or fraying. It is not expensive and is easily sterilized without alteration in nature or character.

No ideal suture exists which may be used at all places, under all circumstances.

Synthesized in 1974, Polylactin (VICRYL) has come to find favour with surgeons all over the world. A synthetic, absorbable suture, polylactin 910 is a copolymer of lactide (from lactin acid) and glycolide (from glycolic acid). Both these acids exist naturally in the body as part of the metabolic process.

The "water-repellent" quality of lactide slows down the penetration of water into the filaments of the suture and thus slows the rate of 'in vivo' tensile strength loss as compared to sutures absorbed by enzymatic digestion. The bulky lactide groups also help keep the submicroscopic polymer chains comprising the filaments spaced apart so that absorption of the suture mass, after strength is lost, is rapid. The precisely controlled combination of these two substances results in a molecular structure which maintains sufficient tensile strength for efficient approximation of tissues during the critical wound healing period, and then rapidly absorbs.
Approximately 60% of its original tensile strength remains at 14 days, while at 21 days 30% of its original strength is retained. Absorption is minimal until about the 40th day. Absorption is essentially complete between 60 and 90 days. Synthetic absorbable sutures are absorbed by a slow hydrolysis in the presence of tissue fluids. Enzymes are not required to break down the polymer chains; only water is required. Thus synthetic absorbable sutures exhibit a lower degree of tissue reaction than surgical gut. After implantation, water gradually penetrates the filaments of the suture & the polymer chain begins to break down.

The copolymer is extruded into monofilament strands. VICRYL monofilaments sutures, dyed violet to enhance visibility in tissue are available for use in Ophthalmic surgery. Conjunctival sutures remaining in place longer than 7 days may cause localised irritation and should be removed as indicated.

Individual monofilaments strands, either dyed violet or undyed (natural), also has braided into suture strands and coated.

Tissue reaction is mild. Being absorbable it should not be used where prolonged approximation of tissues under stress is required.
The empirical formula of the copolymer is \((C_2H_2O_2)_m (C_3H_4O_2)_n\).

They are inert, sterile, nonantigenic, non pyrogenic and elicit only a mild tissue reaction during absorption.

It was decided to use these sutures for subcuticular stitches to study these characteristics & to find their suitability for skin closure.