A sponge implantation test in the rat as a model for screening anti-inflammatory activity

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Despite the large number of tests currently available to screen potential anti-inflammatory and antirheumatic drugs (Swingle, 1974) there are very few based on leucocyte migration into inflammatory exudates. The implanted sponge technique (Saxena, 1960) seems worthy of more general use since it is a simple procedure, allows a variety of measurements to be performed on exudates at various time intervals after implantation and is suitable for the assessment of inhibitory effects on granuloma formation (Ford-Hutchinson, Smith, Elliott, Bolam, Walker, Lobo, Badcock, Colledge & Billimoria, 1975; Wiener, Wiener, Urivetzky, Shafer, Isenberg, Janov & Meilman, 1975; Clarke, Vernon-Roberts & Currey, 1975).

The method may be of particular value in the assessment of substances which interfere with either the formation or action of leucotactic factors derived from complement since rats depleted of complement components by purified cobra venom factor showed a marked inhibition of cellular migration into the sponge exudate (Wiener, Lendvai, Rogers, Urivetsky & Meilman, 1973).

Some applications of the sponge method to the study of the sites of action of conventional antirheumatic drugs and the relationship between the involvement of blood platelets, leucotaxis and prostaglandins in the inflammatory exudates will be presented.

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Pethidine pharmacokinetics in dog: dose and time studies

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Data in man suggest that pethidine is highly cleared predominantly by metabolism and may therefore exhibit a 'first pass' effect on oral dosing (Mather, Tucker, Pflug, Lindop & Wilkerson, 1975; Chan, Kendall, Wells & Mitchard, 1975). To examine and extend this possibility, the effect of dose and time on the oral availability and disposition kinetics of pethidine were studied in three female greyhound dogs. In the dose-range study the following doses were administered on separate occasions—1.0, 2.0 and 3.0 mg/kg intravenously (i.v.) and 2.0, 3.0 and 4.0 mg/kg orally (p.o.) by stomach tube. In the time study, each dog received 2.0 mg/kg i.v. eight-hourly for seven doses and on another occasion 3.0 mg/kg p.o. eight-hourly for seven doses.

The terminal half-life of the blood-concentration-time curve increased with dose (means—50 and 72 min at the 1.0 and 3.0 mg/kg i.v. doses and 77 and 103 min at the 2.0 and 4.0 mg/kg p.o. doses). Comparison of the area under the blood-concentration-time curve (AUC) with dose suggested a non-linear relationship with AUC increasing dis-