

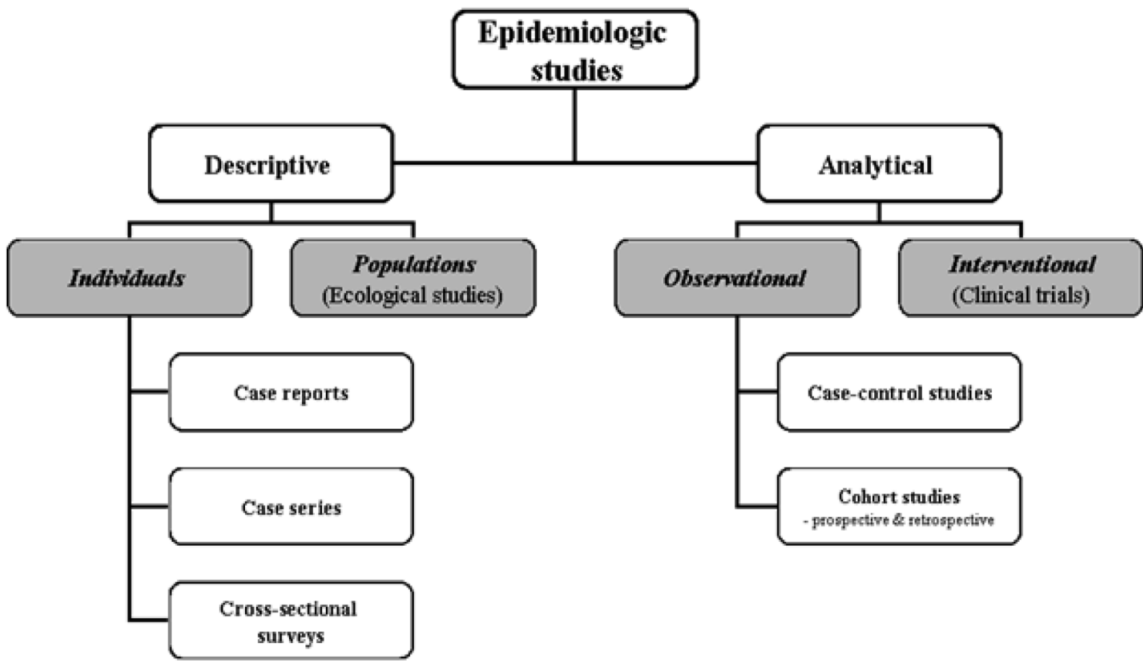


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Descriptive study designs

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Types of descriptive studies

- Case reports
- Case series
- Ecological studies
- Cross-sectional study

Case reports

- Detailed presentation of a single case
 - New or unfamiliar diseases
 - Rare manifestations
 - Generate hypothesis regarding pathophysiological mechanism

CASE REPORT**Adenocarcinoma arising from a gastric duplication cyst with invasion to the stomach: a case report with literature review**

K Kuraoka, H Nakayama, T Kagawa, T Ichikawa, W Yasui

J Clin Pathol 2004;57:428–431. doi: 10.1136/jcp.2003.013946

This report describes a rare case of adenocarcinoma arising from a gastric duplication cyst, with invasion to the stomach wall, in a 40 year old Japanese man. A cystic lesion was found between the stomach and the spleen. The cyst had a well circumscribed smooth muscle layer, corresponding to the muscularis propria of the stomach and the mucosa of the alimentary tract. A well differentiated adenocarcinoma was found within the duplication cyst, invading its serosa. Well differentiated adenocarcinoma was independently found in the fundus of the stomach; the tumour of the cyst was connected by fibrous tissue. Microscopically, there was neither adenocarcinoma in situ nor precancerous lesions, such as epithelial dysplasia, suggesting that the carcinoma derived from a gastric duplication cyst that invaded the stomach. Duplication cysts should be included in the differential diagnosis of cystic masses of the gastrointestinal tract, and the possibility of malignancy within these cysts should be considered.

fibrofibrinous peritonitis. The cyst was strongly adhered to the stomach and retroperitoneum and did not communicate with the gastric lumen. The patient's postoperative course was uneventful. One month after surgery, a protruding and ulcerative tumour was found at the gastric fundus, where the cyst had adhered, by endoscopic examination. Biopsy specimens from the tumour revealed a typical, well differentiated, tubular adenocarcinoma. A proximal gastrectomy was performed. Seven months after surgery, the patient had multiple liver metastases and received chemotherapy.

METHODS

The surgical specimens from the patient were fixed in 10% buffered formalin and processed for paraffin wax embedding. Multiple sections of different fragments were stained with haematoxylin and eosin. Serial sections were immunostained by the avidin-biotin-peroxidase complex technique with the primary antibodies listed in table 1. Antigen retrieval was carried out using high temperature incubation in citrate buffer (0.01 mol/litre, pH 6.0).

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Case series

- Study of larger group of patients (e.g > 10) with a particular disease
 - Larger number may allow the investigator to assess the play of chance
 - Common way of delineating the clinical pictures of a disease
- Suffers from the absence of a comparison group



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Pneumocystis Pneumonia — Los Angeles

Reprinted with permission from *Morbidity
and Mortality Weekly Report*
June 5, 1981

(Editors note: The following is "Document Zero" — the first mention in the medical literature to suggest ... "the possibility of a cellular-immune dysfunction related to a common exposure". These patients comprise cases one through five of the AIDS epidemic in the United States).

In the period October 1980 — May 1981, 5 young men, all active homosexuals, were treated for biopsy-confirmed *Pneumocystis carinii* pneumonia at 3 different hospitals in Los Angeles, California. Two of the patients died. All 5 patients had laboratory-confirmed previous or current cytomegalovirus (CMV) infection and candidal mucosal infection. Case reports of these patients follow.

Patient 1: A previously healthy 33-year-old man developed *P. carinii* pneumonia and oral mucosal candidiasis in March 1981 after a 2-month history of fever associated with elevated liver enzymes, leukopenia, and CMV viremia. The serum complement-fixation CMV titer in October 1980 was 256; in May 1981 it was 32. The patient's condition deteriorated despite courses of treatment with trimethoprim-sulfamethoxazole (TMP/SMX), pentamidine, and acyclovir. He died May 3, and postmortem examination showed residual *P. carinii* and CMV pneumonia, but no evidence of neoplasia.

Patient 2: A previously healthy 30-year-old man developed *P. carinii* pneumonia in April 1981, after a 5-month history of fever each day and of elevated liver-function tests, CMV viremia, and documented



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Ecological studies

- Group as the unit of analysis
- No individual-level information on the distribution of exposure and disease
- Relate whether populations with high rates of disease also have high frequency of the suspected exposure



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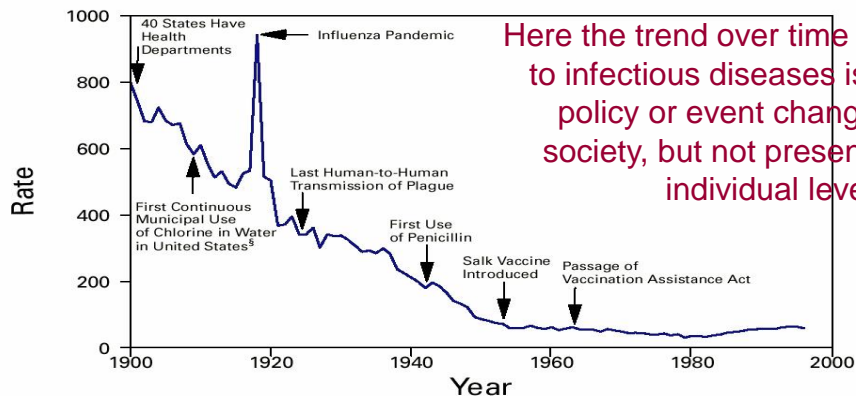
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Ecological study: Trend of infectious diseases deaths in USA

FIGURE 1. Crude death rate* for infectious diseases — United States, 1900–1996†



*Per 100,000 population per year.



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Cross sectional surveys

- Observation of a cross-section of a population at a single point in time
 - Unit of observation and analysis: The individual
- Collect information about disease burden
 - Also known as “prevalence studies”
- Recruitment of study participants
 - Population
 - Population sample
- Observation for the presence of:
 - One or more outcomes
 - One or more exposures



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Uses of cross sectional surveys

- Estimate prevalence of disease or their risk factors
- Distribution of health problem by time, place and person
 - Plan health care services delivery
- Set priorities for disease control
- Generate hypotheses
- Examine evolving trends
 - Before / after surveys
 - Iterative cross sectional surveys



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Examples of research questions to be addressed through surveys

- What is the prevalence of hypertension in a city?
- How satisfied are patients attending government hospitals in Chennai?
- What is the prevalence of physical inactivity among school children?



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Advantages and limitations of cross sectional survey

- Advantages
 - Fairly quick and easy to perform
 - Less expensive
- Limitations
 - Not useful to study disease etiology
 - Not suitable for the study of rare diseases

Cross sectional survey: major limitation

- Prevalent cases
(Old and new cases)
- Exposure and outcome examined at the same time. e.g.
 - Obesity and diabetes



Take home messages

- Case reports and case series are useful for uncommon clinical manifestations
- Ecological studies can be used to relate group level data and generate hypothesis
- Cross sectional surveys help to measure the burden or magnitude of health condition



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Thank you