

# THE FREQUENCY AND FUTURE OF GALLSTONES BELIEVED TO BE QUIESCENT OR SYMPTOMLESS\*

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ALTHOUGH A NUMBER of objections to a general exploration of the peritoneal cavity as a routine part of an abdominal operation can be brought forward, an investigation of the region of the gallbladder, when permissible, is often more informative than is the invasion of the other quadrants.

The palpation of the gallbladder in an additional 150 cases during the course of abdominal operations performed upon women for conditions other than those relating to this structure, now makes possible a review of a series of 500 personal cases in which this procedure has been carried out.<sup>1</sup>

By direct palpation of the gallbladder through celiotomy incisions in 500 women, stones were found to be present in 50, or ten per cent of the cases so examined.

This investigation presented two attractive opportunities: First, to contribute something toward establishing what may be accepted as the percentage of occurrence of gallstones in women, and then to attempt to gather some authentic information as to so-called quiescent or symptomless gallstones.

To discover the presence of gallstones in as many as ten per cent of 500 women not supposed to possess them at the time of discovery would seem to call for comment at least, if not explanation. However, there is good reason to believe that the actual percentage of occurrence among these women may have been even higher. As the stones in each case were discovered by direct palpation, it is probable that there were very few, if any, instances of mistaken identity. On the other hand, it would be quite remarkable if there were no stones present that escaped detection among 500 gallbladders palpated; and for good reasons. It is common experience to find small stones present in a gallbladder when opened after removal that had not been detected during the course of the operation. In the great majority of cases included in this series the gallbladder was examined through a lower abdominal incision, this definitely limiting the facility of examination. Conditions of or about the gallbladder itself, such as adhesions; a large and tense gallbladder; a bladder wall thickened and more or less rigid from chronic inflammation; or one or more small stones floating about in a considerable amount of bile either in the fundus or deep down in the ampulla, at times favored failure to appreciate a stone or stones present.

Allowance must also be made for the fact that this investigation was

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carried out in women only, most of whom had had pregnancies, and most of whom were at an age when biliary disease is most commonly experienced.

Furthermore, there is no evidence to support an opinion that the various conditions bringing these patients to operation had had a share in the conditions resulting in the formation of the stones discovered.

When all the many factors involved have been brought forward and duly considered, and such allowances and adjustments made, as may be necessary, it is probable that the ten per cent incidence of occurrence of gallstones in this group of 500 women would be duplicated in another group similar in size, in nationalities and social status, in ages and in conditions of child-bearing, and that in both it would closely approximate reality.

Merely to find stones in 50 women not supposed to possess them before discovery, does not, without additional information and study contribute materially to existing knowledge as to so-called quiescent or symptomless gallstones.

A tendency to concentrate too much upon the condition presenting itself for operation and to omit entirely other inquiries into the past history, sometimes resulted in failure to bring into the picture information that might have suggested the occurrence of biliary disease either as an episode of the past or as an existing complication.

When the histories of some cases were supplemented following the discovery of the stones, it was found that not infrequently there had been evidences of their presence which were made more or less apparent in one of three ways: There may have been symptoms so slight as to be considered of little or no significance and readily accounted for by indiscretions of diet, indigestion or other common causes. There may have been one or more suggestive or typical attacks in the more or less remote past neither voluntarily reported nor previously inquired into. Finally, it became clear that some patients were actually having gallbladder symptoms at the time, which were erroneously attributed to, or more or less obscured by, the surgical condition obviously present.

In a consideration of the potentialities of inactive gallstones, a useful distinction can be made between those that have asserted their presence on one or more occasions, but at intervals of considerable duration, and those that have never caused symptoms, so far as can be determined, applying the term quiescent to the former variety and symptomless to the latter. Among the 50 patients composing this group of cases there have been satisfactory examples of each type, many more of the first than the second.

It is disappointing that the sources of knowledge as to inactive gallstones are so few and that these are unsatisfactory, since, for the most part, they seem to withhold at the same time that they contribute much valuable information. Many such stones undoubtedly exist and escape detection altogether, while others, even though discovered, are of entirely known duration and still others are promptly removed, thus terminating a possible chance to observe future behavior.

The plain roentgenogram occasionally shows a stone or stones not previously suspected of being present. But it is not possible to demonstrate the presence of the great majority of gallstones in this way.

Not unnaturally, cholecystograms are rarely if ever resorted to in the absence of suspicions regarding the gallbladder, while as to the many instances of unsuspected gallstones found in the gallbladder at autopsy, the absence of reliably recorded gallbladder symptoms does not justify the assumption that there had not been such at any time prior to the demise of the individual found to possess them.

It is probable that there is no better opportunity available at the present time to establish instances of quiescent or symptomless gallstones than by the digital examination of the gallbladder through the abdominal incision. Thus found, it is often possible to combine a careful past history with the developments of the future in an endeavor to isolate cases that can be accepted as instances of one type or the other.

It would seem that the discovery of the presence of gallstones with the abdomen already opened might be followed by the removal of the gallbladder in a majority of the cases. There were several reasons why this policy was not adopted.

Biliary disease not having been suspected before operation, it had not been discussed with the patients and consent to operation upon the gallbladder had not been obtained should this be indicated.

The great majority of the incisions were made in the lower half of the abdomen and there was reluctance to resort to either an undesirable extension of the existing incision or to add a second incision.

In many cases the condition bringing the patient to operation was quite sufficient, in itself, without superimposing a second major operative procedure, with its additional risks.

Over and above all of these considerations was the feeling that the presence of gallstones requires more than the mere removal of the gallbladder. The initial operation upon the biliary system offers the most favorable opportunity to deal satisfactorily, and usually finally, with the individual type of the disease present, and demands a suitably located incision, an adequate exposure, a thorough search for, and examination of, such biliary pathology as may be present, as well as an inspection of adjacent and associated structures, and an unhurried and carefully performed operative procedure adapted to the particular requirements of the individual patient.

In the few cases where the gallbladder was immediately removed, there was either an error in diagnosis and the gallbladder being the sole offender and the only lesion present, or, combined with the pathology that had been the operative indication, it was suspected of being responsible for an important part of, or perhaps all of the patient's complaints.

The reactions of the various patients when informed as to the presence of their gallstones were variable, as might have been expected. Some welcomed the news as an explanation or confirmation of occurrences of

the past; some, having just experienced a generous dose of surgery, were considerably distressed; while still others were apparently incredulous or made light of their condition, having undoubtedly been quite free from impressive symptoms in the past, a circumstance that would assist in explaining the unexpected discovery of the stones.

Surprisingly few seemed to entertain the idea that there was need or reason to be relieved of their stones. Almost without exception the patients were informed at a suitable time as to the presence of the stones. In the absence of contraindications the removal of the gallbladder was not merely recommended but advocated. In surprisingly few cases was this advice accepted, only the onset of acute symptoms in most instances being persuasive, and even this often only after surprisingly long periods of delay. The reluctance to agree to operation was undoubtedly often due to the fact that the majority of the stones had produced few or no really urgent symptoms to emphasize the announcement of their presence, or there had been but a single and almost forgotten attack in the remote past.

The majority having declined operation upon their gallbladders after the facts had been placed before them, the desirability of establishing and continuing contact with each of these patients possessed of gallstones was quite obvious, and this was done, so far as possible, for variable periods up to 20 years or more.

These composed a most favorable group to look to for possible information as to quiescent or symptomless gallstones, and were followed with particular zeal for this reason rather than that many of them were expected to eventually come to cholecystectomy.

An effort was made to discover among the members of the group a few cases, at least, that might be termed symptomless gallstones and still others that might be regarded as quiescent. As was expected, a number of patients sooner or later did develop the necessary symptoms to bring them to operation, while, almost at once, two problems presented themselves as to some of the others. Knowing of the presence of the stones it became necessary at times to distinguish between minor digestive disturbances that would have been considered insignificant in other individuals and accounted for by the usual common causes, and identical complaints that had their origin in the gallbladder pathology itself.

Again, in a few cases, it was difficult, even sometimes impossible, to feel assured of the entire absence of symptoms that might be legitimately related to the gallbladder, even after the most careful, indirect and frequently repeated questionings.

It is at times no mean accomplishment to formulate an unambiguous question, to convey this to, and have it clearly comprehended by, the individual to whom it is directed and then to receive in return a precise and convincing answer.

This fact became particularly apparent when the necessity of obtaining

precise and essential information was found to depend almost exclusively upon the processes of interrogation.

Only six of the original 50 cases can be listed as having been both free from all symptoms since the appreciation of the stones and as having remained under observation up to the present time.

Two of these give a past history of doubtful accuracy, certainly, sufficiently so to disqualify them for listing as never having had symptoms.

One other had had quite definite symptoms in the past, and one might have had symptoms mixed with those of a gastric ulcer.

Two cases, having been under observation for periods of 9 and 15 years, were sufficiently clear-minded and responsive to give satisfactory assurance as to the entire absence of all gallbladder symptoms in their past histories, and having been equally free from all symptoms while under observation.

A number of instances of long periods of quiescence of gallstones were discovered among the 50 gallstone cases. Apparently, it is not uncommon for a single typical attack to occur and then be followed by such a long period of freedom from symptoms as to create the impression that it was the final one. This seems to be a phase of the natural history of gallstones that is not uncommon and is generally recognized.

In order to obtain additional information as to the condition of the gallbladders of some of the patients found to possess stones and perhaps confirm the findings of cholelithiasis, roentgenologic examinations were made in such cases remaining under observation as were willing to cooperate in this investigation and where conditions permitted. There were ten of these, eight having cholecystograms and two plain films.

In four of these cases it was found that the gallbladder did not fill with the dye and that the gallstones were not visualized. These cases had gone for 10, 14, 18 and 21 years, respectively, since the discovery of the stones, two of the four having had symptoms at some time or other during the period (Cases 1, 6, 17 and 18).

In three cases the dye entered and left the gallbladder, the stones being demonstrated in each case. One of these examinations was made two weeks after the discovery of the stones, the patient apparently having mild symptoms, another five years after the discovery of the stones, there having been no symptoms; and the third, 13½ years after the discovery of the stones, there never having been any symptoms (Cases 23, 34 and 47).

In one case the dye did not enter the gallbladder but the stone could be seen four years after its discovery, there having been mild, though definite, symptoms in recent months (Case 37).

In two cases the presence of the stones could be shown in the plain film, three and one-half and six years, respectively, after their detection, the former case having had no symptoms, the latter having had annoying and persistent digestive disturbances the greater part of the entire period (Cases 35 and 50).

SYMPTOMLESS GALLSTONES

The relation of typhoid fever to this group of cases, and especially to the cases found to have gallstones, was of considerable interest. Two hundred fifty-nine of the 500 patients were questioned as to typhoid fever and 13, or five per cent, declared that they had had this disease. Of the 50 patients found to have stones, 40 were asked as to an attack of typhoid fever in the past, and four said that they had had this disease. Therefore, of the 40 patients that had had gallstones four had had this condition subsequently to an attack of typhoid fever and 36 had gallstones without there being a history of such an occurrence in the past. It should be noted that of the 13 patients among the 259 questioned as to typhoid fever nine had had this disease, but had not developed gallstones subsequently. Therefore, twice as many cases that had had typhoid fever escaped gallstones as had had typhoid and developed them.

Several topics related to this investigation present themselves for comment.

TABLE I

500 CASES IN WHICH THE GALLBLADDER WAS EXAMINED BY PALPATION DURING OPERATION, GROUPED BY DECADES AND SHOWING INCIDENCE OF OCCURRENCE OF GALLSTONES

Decade.....	10-19	20-29	30-39	40-49	50-59	60-69	Totals
Gallbladders explored.....	4	100	195	152	33	16	500
Stones present.....	0	7	13	20	5	5	50
Approximate percentage of occurrence of stones.....	0	7.	6.25	13.	15.	31.	10.

TABLE II

OPERATIVE CONDITIONS IN 500 CASES IN WHICH THE GALLBLADDER WAS EXAMINED BY PALPATION DURING OPERATION

The Uterus: Uterine fibroids.....	193
Uterine displacements, fibrosis of uterus, cancer of uterus, etc.....	112
The Uterine Adnexa: Ovarian cysts, inflammations of the tubes, tubal pregnancies.....	102
Other Conditions: Incisional and umbilical herniae, cancers of the colon, exploratory operations.....	93

Palpation of the gallbladder through the operative abdominal incision, while often affording information of value to both doctor and patient, should be employed with restraint and limited to suitable cases.

Undoubtedly, with increasing familiarity with the procedure the disturbance to the patient in accomplishing it is reduced, and considerable skill is acquired both in appreciating stones that may be present or, on the other hand, and determining with a reasonable degree of confidence that there is none.

While it seems that a small and solitary round stone may remain in the gallbladder at times without either producing symptoms or effecting pathologic changes in the gallbladder wall, very few cases among all those in this group have entirely escaped the consequences of retaining their stones. Very good and numerous reasons can be presented for the removal of the gallbladder found to contain stones. There is high probability of the eventual development of trouble, which, as in one case, may come in the

form of an acute gangrenous gallbladder and as the first manifestation of the presence of the stones.

As the individual possessing gallstones grows older the risks of cholecystectomy increase, as does also the extent of the pathology involving the biliary system.

#### SUMMARY

The final disposition of the 50 cases found at operation to possess gallstones can be given as follows: Six received immediate treatment for their gallstones; eight died more or less promptly, 12 sooner or later returned for removal of their gallbladders; 12 were lost contact with after various periods of observation; and 12 remain under observation at the present time.

Only two cases are presented as presumably examples of symptomless gallstones, and these from a fairly large group of cases representing biliary disease in its milder, intermittent or even completely unassertive varieties.

Numerous cases of quiescent gallstones were discovered, varying greatly in duration and judged by the period of time elapsing between the occasion of the discovery of the stones and the last preceding attack, or a subsequent attack, or both.

A brief review of each of the individual cases composing the group, with details of interest, follows:

Five cases found to have gallstones had cholecystectomies at the time of the discovery of the stones.\* Two cases were errors in diagnosis; two had gallbladder symptoms complicating their operative conditions; one had apparently never had symptoms caused by the existence of the gallstones.

**Case 4.**—G. W., age 23 at time of operation, September 19, 1921: Married and three pregnancies. Operation: Ventrosuspension, appendicectomy. The gallbladder, found to contain an assortment of stones, immediately removed. Owing to patient's age and the displacement of the uterus, the possible significance of 19 months of indigestion since the birth of her second child was not appreciated until the gallstones were discovered.

**Case 7.**—R. A., age 32 at time of operation, May 1, 1923: No typhoid. Married and five pregnancies. Diagnosis, chronic appendicitis, based upon four definite, though mild attacks, involving the right lower quadrant during the preceding two months. There had been no digestive symptoms between attacks and the presence of gallstones was not suspected until found at operation. Gallbladder and appendix removed.

**Case 19.**—L. F., age 35 at time of operation, November 26, 1927: No typhoid. Single. An exceedingly obese patient. Operation: Excision large ovarian cyst. Seven large gallstones discovered in the gallbladder, which was removed. As there had been no symptoms that could be related to the gallbladder, the stones could be regarded as coexistent or even symptomless.

**Case 24.**—R. B., age 36 at time of operation, July 19, 1929: Had typhoid. Married and two pregnancies. Exploratory celiotomy for large tumor arising from pelvis, thought to be cyst or fibroid. A six-months fetus, with hydramnios was found. The gallbladder was found to contain a large number of small stones, and was then suspected

\* In making up a group of the cases found to have stones, numbers were assigned to the cases in the chronological order of their discovery. These numbers are retained in the subdivisions of the group.

of being the cause of the lower abdominal pain, although uterine complications could not be excluded. Gallbladder removed.

**Case 31.**—M. S., age 23 at time of operation, October 22, 1931: No typhoid. Married and two pregnancies. Operation for what were believed to be symptom-producing adhesions in right lower quadrant following appendicectomy. Gallbladder found to contain stones. Review of the history makes it doubtful that the appendix was ever affected. Misinterpretation of the symptoms caused by the gallstones resulted in an error in diagnosis in each instance. Gallbladder removed.

One case, found to have a solitary gallstone, was treated by opening the gallbladder, removing the stone and closing the gallbladder at the time of the discovery of the stone.

**Case 22.**—M. C., age 49 at time of operation, March 23, 1929: No typhoid. Married and six pregnancies. Hysterectomy for uterine fibroids. The gallbladder was found to contain a solitary small stone. The gallbladder was opened, the stone removed, and the incision in the gallbladder closed with some difficulty because of a thin and friable wall. For the 12 years since the operation the patient has complained only of occasional spells of gastric acidity, with some gas. This condition had also been present for a year or so preceding operation. However, the symptoms described are insufficient either in degree or type to be definitely related to the gallbladder or to suggest a recurrence of the stone.

Eight cases found to have gallstones were lost to this investigation because of death, five of these dying within a month, two under two years, and one surviving over five years. Four had had no gallbladder symptoms, so far as known. One had gone 21 years without an attack and one for seven years. Two had had symptoms at intervals for 7 and 14 years, respectively, preceding discovery of the stones.

**Case 14.**—M. H., age 49 at time of operation, February 7, 1925: Married and one pregnancy. Operation for malignancy of the uterus. Gallbladder contained a large solitary stone. Patient died 20 months later, apparently never having had symptoms due to the presence of the stone.

**Case 26.**—C. L., age 56 at time of operation, September 9, 1930: Married and one or more pregnancies. Operation for cancer of cecum with obstruction. The gallbladder contained a solitary stone size of a hickory nut. So far as known there had been no symptoms in the past referable to the gallbladder, the patient dying four days after operation.

**Case 29.**—M. N., age 62 at time of operation, May 2, 1931: No typhoid. Married and two pregnancies. Exploratory celiotomy for cancer of the uterus, found to be inoperable. Gallbladder found to contain one and probably more stones. Upon inquiry into the patient's past it was found that there had been an attack of gallstone colic in 1910 which lasted two days, followed by jaundice. Patient died one month following operation, apparently having lived for 21 years, or more, without the recurrence of symptoms referable to the gallbladder.

**Case 30.**—M. S., age 46 at time of operation, September 21, 1931: Married and one or more pregnancies. Operation for fibrosis of uterus. Gallbladder found to contain a cluster of small stones. After operation it was learned that patient had had a definite attack of right upper quadrant pain, with vomiting, 14 years before, followed by other attacks at intervals. The discovery of the presence of the stones resulted in additions to the patient's past history that should have been on record before operation, but

were omitted because of the urgent symptoms that brought her to the hospital. Patient died of complications on second day following operation.

**Case 32.**—M. F., age 65 at time of operation, July 22, 1932: No typhoid. Married and two pregnancies. Operation: Excision of malignant cyst of left ovary. Gallbladder contained 12 or more small round stones. Patient lived five months without gallbladder symptoms, nor had there been, so far as is known, any such symptoms at any time in the past.

**Case 40.**—C. G., age 62 at time of operation, June 3, 1935: Married, and one or more pregnancies. Operation: Cecostomy for malignancy of ascending colon with obstruction. Upon palpation, the gallbladder was found thickened and contracted about three round stones. Patient survived operation six days, and autopsy confirmed the observation made at the time of operation, three large stones being disclosed. A past history of seven years of indigestion that had not seemed particularly relevant before operation was thus probably accounted for.

**Case 45.**—K. O'C., age 34 at time of operation, August 17, 1936: No typhoid. Married and five pregnancies. Operation: Excision of cancer of cecum, and anastomosis. A stone the size and shape of a small olive felt in the gallbladder. Patient died on the 8th day after operation. The presence of the stone was confirmed at autopsy, the biliary passages being open and apparently normal. Apparently the only symptoms complained of had been those ascribed to the developing tumor of the large bowel.

**Case 46.**—F. K., age 62 at time of operation, May 6, 1937: No typhoid. Married and no pregnancies. Hysterectomy for adenocarcinoma of the uterus. The gallbladder was found to contain two marble-like stones. Inquiry after operation revealed that for a period of two years, beginning some five years previously, there had been several typical attacks of biliary colic. The patient died in July, 1942, there having been eight years without symptoms, three before and five after operation.

Twelve cases found to have gallstones subsequently came to cholecystectomy, having sooner or later developed acute symptoms—four during the first year following the discovery of the stones, four during the second year, and four at intervals of 8, 6, 5 and one-half and 2 years and ten months, respectively.

**Case 8.**—R. G., age 28 at time of operation, May 8, 1923: Had typhoid. Married and one pregnancy. Operation for excision of large ovarian cysts. Gallbladder found to be packed with stones. After two years patient developed acute gallbladder symptoms and cholecystectomy was performed elsewhere.

**Case 10.**—S. C., age 22 at time of operation, December 21, 1923: No typhoid. Married at 15, three pregnancies. Operation for advanced bilateral adnexal disease. Gallbladder felt to be filled with stones. A period of three years without symptoms was followed by five years of severe intermittent attacks. Cholecystectomy, October 5, 1931, eight years after discovery of the stones.

**Case 11.**—L. A., age 51 at time of operation, March 13, 1924: No typhoid. Married and ten pregnancies. Hysterectomy for uterine fibroids. Gallbladder contained numerous stones. Patient ridiculed the announcement as to the presence of stones, disclaiming all symptoms. Nine months later developed first acute attack. Attacks recurring, the gallbladder was removed November 29, 1925.

**Case 12.**—B. C., age 29 at time of operation, November 29, 1924: No typhoid. Married and one pregnancy. Operation for excision of ovarian cyst. Gallbladder found to contain numerous stones. Following operation it was learned that patient had been under medical care for mild but persistent indigestion for some time. Chole-

cystectomy March 10, 1925, with most satisfactory results. Nineteen stones found in the gallbladder.

**Case 15.**—L. H., colored, age 51 at time of operation, May 4, 1926: No typhoid. Married and one pregnancy. Hysterectomy for large uterine fibroid. A large solitary stone felt in ampulla of gallbladder. Three months after operation digestive symptoms developed. After another eight months attacks of pain came on and increased. Cholecystectomy March 13, 1928.

**Case 27.**—H. H., colored, age 22 at time of operation, October 20, 1930: No typhoid. Single. Operation for excision of large ovarian cyst. Several stones felt in the gallbladder. Two years after operation there was pronounced fat intolerance. During next four years digestive disturbances greatly increased. Cholecystectomy October 26, 1936, six years after the discovery of the stones, with great benefit.

**Case 36.**—H. B., age 37 at time of operation, March 13, 1924: No typhoid. Married, no pregnancies. Operation for excision of large ovarian cyst. Gallbladder felt tense but no stones were detected. An incisional hernia was repaired May 17, 1930, the gallbladder was not explored. On January 22, 1934, ten years after the first operation, the hernia was again repaired and a stone the size of a marble discovered in the gallbladder. The gallbladder was removed, July 31, 1934, following an acute episode of typical symptoms, with jaundice.

**Case 38.**—M. K., age 37 at the time of operation, June 11, 1934: No typhoid. Married and 12 pregnancies. Repair of a rather large epigastric hernia. Sole complaint had been the swelling of 12 years duration. The gallbladder contained many small stones. Following operation it was learned that during the last pregnancy, terminating three months previously, patient had been slightly jaundiced. Patient soon developed crampy epigastric pains radiating to the back, and fat intolerance. The gallbladder was removed September 27, 1934, and contained 89 faceted stones.

**Case 39.**—A. O., age 54 at time of operation, August 23, 1934: No typhoid. Married and three pregnancies. Repair of perineum and ventrofixation. Several faceted stones discovered in gallbladder. Six months later patient developed attacks of upper abdominal pain, and these increasing, the gallbladder was removed May 15, 1935.

**Case 42.**—J. M., age 43 at time of operation, August 13, 1935: Had typhoid. Married and no pregnancies. Operation for obstructing postappendectomy adhesions. Several large faceted stones felt in the gallbladder. Six months later there was recurrence of abdominal pains, but without obstruction and presumably of gallbladder origin. Gallbladder removed February 4, 1937, with most satisfactory results.

**Case 44.**—F. S., age 61 at time of operation, May 27, 1936: No typhoid. Single. Hysterectomy for cancer of the body of the uterus. A number of small stones felt in the gallbladder. So far as could be determined patient never had gallbladder symptoms until the onset of an acute attack three days before the second operation, April 28, 1938, when a gangrenous gallbladder was removed filled with *Streptococcus viridans* pus and disintegrated stones. Recovery.

**Case 47.**—E. H., age 37 at time of operation, August 28, 1937: No typhoid. Married and one pregnancy. Salpingectomy for chronic pelvic inflammatory disease following her confinement in March, 1936. Gallbladder contained numerous small stones. There had been digestive symptoms for several years preceding the pregnancy. Seen at intervals for five years; patient continued to complain of general abdominal pains, which finally developed into definite attacks of gallbladder colic. After six months of attacks, that increased in frequency and intensity, the patient submitted to cholecystectomy March 13, 1943.

Twelve cases found to have gallstones were sooner or later lost contact with. Six were free from gallbladder symptoms when last seen. Two of these had been followed for five years or more; two for four years; the other two

for three and one-half years and ten weeks, respectively. Three were having symptoms when last seen, and three disappeared too promptly after the discovery of the stones to permit observation.

**Case 2.**—C. G., age 40 at time of operation, June 4, 1921: Married and eight pregnancies. Operation for excision of large ovarian cyst. Gallbladder found filled with stones. Inquiry into patient's past history failed to elicit complaints that might be referred to the gallbladder. Patient could not be found following completion of convalescence.

**Case 3.**—V. C., age 40 at time of operation, August 6, 1921: Married and seven pregnancies. Hysterectomy for uterine fibroids. Gallbladder felt to contain stones. Upon investigation following operation it was learned that patient had had occasional attacks of epigastric pain, presumably, but not too clearly, due to her gallbladder. Could not be found following completion of convalescence.

**Case 5.**—V. A., colored, age 38 at time of operation, February 25, 1922: Married and one pregnancy. Hysterectomy for an unusually large uterine fibroid. Gallbladder was found to contain eight stones. History had recorded frequent belching of gas which was attributed to, and may have been due to the presence of the abdominal tumor. Patient was followed for five years after operation, without occurrence of gallbladder symptoms during this period.

**Case 9.**—M. B., age 43 at time of operation, May 31, 1923: Married and ten pregnancies. Operation for repair of umbilical hernia. A solitary round stone the size of an ordinary marble was found in the gallbladder. For one year preceding operation patient had complained of abdominal pain, which was attributed to the hernia, and presumably correctly so since patient was followed for four years after operation without occurrence of gallbladder symptoms before being lost sight of.

**Case 13.**—C. M., colored, age 41 at time of operation, January 27, 1925: Single. Hysterectomy for large uterine fibroid. Gallbladder found to contain a large stone impacted in the ampulla. Two years of increasing indigestion and attacks of abdominal pain had been attributed to the large and growing tumor. There was relief of symptoms for six months after operation and then recurrence with greater severity. After nine months of persisting symptoms patient finally agreed to operation, and then suddenly disappeared.

**Case 18.**—F. H., age 46 at time of operation, April 9, 1927: No typhoid. Married and five pregnancies. Hysterectomy for fibrosis of uterus. Gallbladder was found to contain a large solitary stone and probably smaller stones. Inquiry revealed that patient had been jaundiced during her last pregnancy five years before. Six months after operation patient disappeared for nearly ten years, reappearing in April, 1937, because of a prolapse. At this time she was having, and had had for the past six months, indigestion, gas and fat intolerance, and inability to manage a full meal. Refusing cholecystectomy, the prolapse was repaired. After ten months, free of all symptoms, she again disappeared.

**Case 20.**—M. P., age 48 at time of operation, April 7, 1928: No typhoid. Married and one or more pregnancies. Hysterectomy for uterine fibroids. The gallbladder contained numerous small stones, mostly in the ampulla. Inquiry after operation failed to establish a history of attacks of pain or digestive symptoms that might be due to the presence of the stones. Patient disappeared at the termination of her convalescence.

**Case 21.**—C. R., age 43 at time of operation, September 27, 1928: Married and three pregnancies. Typhoid fever when 13 years of age. Operation for repair of incisional hernia in lower abdomen. Two small faceted stones were felt in the gallbladder. During the following five and one-half years there were no symptoms suggestive of the presence of the stones. The patient disappeared upon recommendation of an operation for recurrence of the hernia.

## SYMPTOMLESS GALLSTONES

**Case 25.**—M. W., colored, age 32 at time of operation, July 25, 1929. No typhoid. Married and two pregnancies. Hysterectomy for large uterine fibroid. The gallbladder contained numerous medium-sized faceted stones. Patient was followed for three and one-half years before being lost contact with and during this period was entirely free from symptoms and without need of restrictions in diet.

**Case 28.**—J. B., colored, age 35 at time of operation, February 28, 1931: No typhoid. Married and no pregnancies. Hysterectomy for uterine fibroids. A solitary stone found in the gallbladder, size of a marble. Past history was irrelevant. Thirteen years before there had been a gynecologic operation, the gallbladder presumably was not investigated. Patient was followed for over a year, gaining in weight but complaining of flatulence, possibly related to her gallbladder.

**Case 33.**—G. H., colored, age 42 at time of operation, February 2, 1933: No typhoid. Married and no pregnancies. Hysterectomy for uterine fibroids. The gallbladder was thickened and contained a large number of stones. There had been acute attacks of lower abdominal pain thought to be due to intestinal adhesions, which were found to be extensive at operation. Fourteen years previously the patient had been operated upon for adnexal disease, the gallbladder apparently was not explored. Patient was free of all symptoms when last seen, ten weeks after the discovery of the stones.

**Case 41.**—L. E., colored, age 40 at time of operation, July 18, 1935: No typhoid. Married and two pregnancies. Hysterectomy for uterine fibroids. A small round stone felt in the gallbladder, with probable additional smaller stones. When last seen, nearly four years after operation, there had been no symptoms that might be attributed to the gallbladder during this period.

Twelve cases found to have gallstones have continued under observation. Six of these have had one or more attacks of biliary disease or are having symptoms at the present time, this during periods of observations ranging from 4 to 15 years. Without regard to occurrences preceding the discovery of the stones, these cases seem properly to belong to the quiescent gallstone group.

The six remaining cases are believed to have had no symptoms during periods of observation of 20, 15, 13, 9, 3, and 3 and one-half years. Four of these have definitely had or cannot be said not to have had, symptoms prior to the discovery of the stones, and even though believed to have been symptom-free since, cannot be rated as cases of symptomless stones but are added to the quiescent gallstone group.

Two of these 12 cases can be said to have had no symptoms before the discovery of the stones with considerable assurance. They may be accepted as cases of symptomless gallstones, if such exist. One of these was operated upon at the age of 38 and followed for 15 years, and one at the age of 49 and followed for nine years.

**Case 1.**—A. H., age 30 at time of operation, July 5, 1918: No typhoid. Married and five pregnancies. Ventrosuspension for posterior displacement of the uterus. A small number of faceted stones were felt in the gallbladder. While this patient was of a thin and nervous type and had innumerable complaints, none of which could be assembled to form a picture of any one thing, it has been impossible to ascertain that during a period of over 20 years there have been symptoms that could be definitely attributed to the gallbladder.

**Case 6.**—S. W., age 43 at time of operation, March 24, 1923: No typhoid. Married and three pregnancies. Operation for excision of ovarian cyst. Gallbladder felt to

contain two medium-sized faceted stones. It was learned after operation that four years previously and three days after the birth of her last child, there had been a definite gallbladder attack, with jaundice. There have been two attacks without jaundice at intervals of five and ten years since the discovery of the stones. There has been no attack during the past three years.

**Case 16.**—A. W., age 38 at time of operation, August 18, 1926: No typhoid. Married and two pregnancies. Salpingectomy for ruptured ectopic. Gallbladder found to contain a stone the size of a marble, with several smaller stones. Owing to a misunderstanding with the family physician the patient was not informed as to the discovery of the stones for 15 years. When finally told of their presence, she stated that she was then and always had been in perfect health, asked as to the location of the gallbladder and what would be the characteristic symptoms should these appear.

**Case 17.**—A. M., age 45 at time of operation, March 3, 1927: No typhoid. Single. Hysterectomy for uterine fibroids. Gallbladder contained six or more very small stones. Patient was free from symptoms for nine years, then for one year was annoyed by gas and bloating and occasional crampy pains across upper abdomen. There has been no recurrence of these symptoms for the past five years.

**Case 23.**—C. H., age 52 at time of operation, April 27, 1929: No typhoid. Married and three pregnancies. Operation, salpingectomy with ventrosuspension. The gallbladder was felt to contain a small, solitary nonfaceted stone. The patient was seen a year after operation and then disappeared for twelve and a half years, returning thirteen and a half years after the discovery of the stone because of a breast tumor. She had had no symptoms that would indicate a disturbance caused by her gallstones.

**Case 34.**—M. M., age 49 at time of operation, April 4, 1933: No typhoid. Married and two pregnancies. Hysterectomy for uterine fibroids. Gallbladder contained a round stone and a number of smaller stones. Patient had had no symptoms referable to the gallbladder prior to operation, and has been entirely free from all such symptoms for more than nine years since.

**Case 35.**—A. W., age 35 at time of operation, October 3, 1933: Married and one pregnancy. No typhoid. Ventrosuspension. Gallbladder was felt to contain a considerable number of small stones. Eighteen months after operation patient developed digestive symptoms, chiefly gas and fat intolerance, regularly brought on by indiscretions of diet. These symptoms have persisted in variable degree for ten years, to date.

**Case 37.**—I. C., age 28 at time of operation, May 24, 1935. No typhoid. Married and three pregnancies. Gallbladder found to contain a round stone the size of a marble, with additional smaller stones. Three years after operation patient gradually developed digestive symptoms, with fat intolerance, which persisted for more than two years. The past year has been entirely symptom-free.

**Case 43.**—M. P., age 36 at time of operation, April 8, 1936: Married and two pregnancies. Ventrosuspension for posterior displacement of uterus. A very small and apparently solitary stone felt in the gallbladder. Six months following operation patient had a definite attack of biliary colic followed by two other attacks during the succeeding 12 months. There have been no recurrences during the past four years.

**Case 48.**—M. H., age 48 at time of operation, January 19, 1938. No typhoid. Married and one pregnancy. Gastro-enterostomy for pyloric obstruction. Symptoms had been typical of the gastric condition present. A faceted stone, apparently solitary, was felt in the gallbladder. Operation relieved all symptoms, the gallstone apparently having played no part in them. The patient has been in excellent health for three years, having gained in weight and general condition and remained free of all complaints.

**Case 49.**—G. D., age 48 at time of operation, February 18, 1938: No typhoid. Married and no pregnancies. Hysterectomy for uterine fibroids. Gallbladder found to contain one faceted stone one-half inch in diameter and numerous other small stones. The patient when informed of the presence of the stones stated that she had had indigestion for years. Fourteen months after operation fat intolerance developed, with

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tendency to nausea and inability to manage full meals. These symptoms persisted for two years, and were followed by a year of greatly improved general health. When last reporting patient stated that she had not been so well in the past five years.

**Case 50.**—L. K., age 49 at time of operation, April 9, 1938: No typhoid. Married, three pregnancies. Hysterectomy for uterine fibroids. There were several small faceted stones in the gallbladder. Operation was delayed for some months because of attacks of epigastric pain, suspected of being of cardiac origin. This was not substantiated nor has it been since operation, which was followed by complete relief of symptoms. There have been three and a half years without symptoms which are now believed to have been due to the gallstones.

### REFERENCE

- <sup>1</sup> Truesdell, Edward D.: Incidental Gallstones in Women. *ANNALS OF SURGERY*, **98**, 362, September, 1933.